

EXTRACTION EXTINCTION

WHY THE LIFECYCLE OF FOSSIL FUELS THREATENS LIFE, NATURE AND HUMAN RIGHTS



















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COLUMBIA LAW SCHOOL
HUMAN RIGHTS CLINIC

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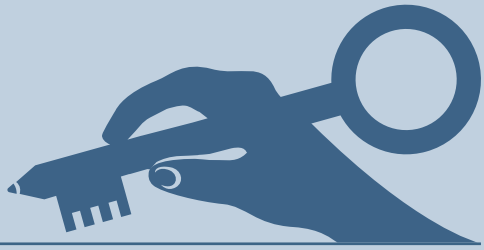
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2
KEY TERMS



A. DEFINED TERMS



Anthropogenic (or human-caused) climate change: the significant and sustained change in climate patterns driven by escalating concentrations of greenhouse gases in the atmosphere due to human activities and systems, particularly the burning of fossil fuels for energy production, transportation and industrial processes, as well as agricultural practices, deforestation and changes in land use. This report only discusses human-caused climate change, often abbreviated as 'climate change'.

Biological diversity (or biodiversity): the variety of life on Earth and the natural patterns it forms, including the wide variety of plants, animals and microorganisms. Biodiversity also encompasses the variety of ecosystems on Earth, including those that occur in deserts, forests, oceans, wetlands, mountains, lakes, rivers and agricultural landscapes. In each ecosystem, living creatures, including humans, form a community, interacting with one another and with the air, water and soil around them.[1]

Carbon reservoir: component(s) of the climate system where a greenhouse gas or a precursor of a greenhouse gas (chemical compounds that react to produce greenhouse gases) is stored.[2] They include the atmosphere, oceans, rocks and fossil fuels, among others.

Carbon sink: any process, activity or mechanism which removes a greenhouse gas or a precursor of a greenhouse gas from the atmosphere.[3] Forests are a common example.

Climate justice: phrase used to highlight the justice implications of the climate crisis and the need to design just and intersectional policy responses to climate change. Climate justice approaches focus on the root causes of the climate crisis and how climate change builds on and magnifies inequalities within and between countries. Climate justice demands are based on the imperative of addressing such imbalances and injustices, starting by centring climate action in the perspectives, knowledge and demands of peoples and communities most severely affected by climate change. Achieving climate justice requires dismantling systemic discrimination and inequalities based on gender, ethnicity, race, class, disability and age, among others, and ensuring intergenerational justice.

Corporate capture: the influence that corporate actors exert over political, policy-making and regulatory processes.

Criminalization: in this report, the term refers to the misuse of legal proceedings, arrests, detention or prosecutions against individuals or groups for activities that are protected under international law or otherwise on unfounded grounds. The criminalization of human rights defenders specifically involves the conflation of peaceful activism, campaigning or mobilization with criminal activity. It includes the instigation of spurious criminal proceedings against defenders in retaliation for their work, but also smears, baseless criminal designations,[4] the imposition of unjustified administrative requirements, inspections and sanctions.

Critical ecosystem: in this report, the phrase refers to natural environments that are rich in biodiversity, critical for carbon sequestration and/or where continued environmental degradation or disasters would trigger cascading ecosystem collapse.

Defossilization: a term coined in 2025 by the UN Special Rapporteur on the promotion and protection of human rights in the context of climate change to signal the imperative of justly and equitably phasing out the entire lifecycle of fossil fuels, including plastics and petrochemicals and fossil fuel subsidies. Phase out also requires ending the fossil fuel industry's disinformation campaigns and legal strategies that downplay the harms of fossil fuels and undermine climate action.

Energy transition: the global shift from energy systems reliant on the burning of fossil fuels to renewable energy sources.

Environmental human rights defenders: people who, by themselves or together with others, stand up for human rights by protecting the environment on which we all depend. They peacefully promote and protect clean air and water, biodiversity, land rights, the right to a clean, healthy and sustainable environment, climate justice and a just energy transition.[5]

Environmental racism: any environmental policy, practice, law or regulation that differentially affects or disadvantages (whether intentionally or unintentionally) individuals, groups or communities based on race, skin colour, Indigeneity, descent or national or ethnic origin.

Fenceline communities: communities that live near industrial infrastructure, including that which produces or transforms fossil fuels. Fenceline communities directly experience the adverse impacts of pollution and environmental degradation emanating from extractive projects and tend to live in so-called "sacrifice zones".

Fossil fuels: non-renewable energy sources including coal, crude oil (also known as petroleum) and so-called "natural" gas (hereinafter referred to as 'fossil gas'). Fossil fuels form over millions of years from the fossilized, buried remains of plants and animals. Their burning and oxidation produce large quantities of carbon dioxide (CO_2).

Frontline communities: people who bear the brunt of the harm caused by anthropogenic climate change (for example, communities who are most affected by climate-induced rapid and slow onset events), many of whom are marginalized and experience intersecting forms of discrimination based on race, gender, ethnicity, disability and other prohibited grounds under international law, often compounded by cultural, economic and social exclusion.

Greenhouse gas (GHG): a compound that traps heat in the atmosphere. The emission of GHGs resulting from human activity is the fundamental cause of the "greenhouse effect" leading to global heating. Carbon dioxide (CO_2) accounts for two-thirds of GHGs and the increasing concentration of CO_2 in the atmosphere is largely the product of burning fossil fuels.[6]

Intergovernmental Panel on Climate Change (IPCC): body set up by the United Nations Environment Programme and the World Meteorological Organization to synthesize and analyse the scientific evidence regarding climate change and how to address it.

Just transition: policies ensuring that the shift to a low-carbon economy is fair and equitable and addresses the social and economic harms caused by the energy transition (for example, due to increased mining of energy transition minerals for electric batteries and energy storage) and protects the human rights of all, including workers and communities whose livelihoods depend on the fossil fuel sector, and fenceline communities living near mining and other infrastructure related to the transition to renewable energy.

Methane (CH_4): a potent greenhouse gas emitted from various sources. Methane is the primary component of fossil gas produced during extraction, transport and processing of fossil fuels, and is also released from agriculture and waste. Methane accounts for 25% of the global heating we are experiencing today.[7]

Mitigation: efforts and policies to reduce, prevent or remove greenhouse gas emissions, such as transitioning to renewable energy, improving energy efficiency and reforestation.

Net zero: a state where the amount of greenhouses gases produced is balanced by those removed from the atmosphere. Achieving net zero entails reducing greenhouse gas emissions and attempting to 'cancel out' remaining emissions through reabsorption from the atmosphere, such as through natural carbon sinks (for example oceans and forests) and unproven technologies such as carbon capture, storage and removal.[8]

Renewable energy: energy derived from natural sources that are not depleted when they are consumed, including but not limited to solar and wind energy.

Sacrifice zone: a heavily contaminated area where low-income and marginalized groups bear the disproportionate burden of exposure to pollution and toxic substances.[9]

B. ACRONYMS

BPL	Better Planet Laboratory
CBD	Convention on Biological Diversity
CBDR-RC	Common but differentiated responsibilities and respective capabilities
CEDAW	Convention on the Elimination of Discrimination against Women
CEDAW Committee	Committee on the Elimination of Discrimination against Women
CESCR	Committee on Economic, Social and Cultural Rights
COP	Conference of the Parties
CSO	Civil society organization
ESIA	Environmental and social impact assessment
FPIC	Free, prior and informed consent
GHG	Greenhouse gas
GST	Global Stocktake
IACHR	Inter-American Commission on Human Rights
IACtHR	Inter-American Court of Human Rights
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICJ	International Court of Justice
IPCC	Intergovernmental Panel on Climate Change
JETP	Just Energy Transition Partnership
KM-GBF	Kunming-Montreal Global Biodiversity Framework
LNG	Liquefied natural gas
NGO	Non-governmental organization
NDC	Nationally Determined Contribution
OAS	Organization of American States
SAR	Synthetic aperture radar
UNDRIP	UN Declaration on the Rights of Indigenous Peoples
UNFCCC	UN Framework Convention on Climate Change

3
EXECUTIVE SUMMARY

A. CONTEXT

Climate change is an unprecedented global human rights emergency. The burning of fossil fuels (coal, oil and gas) emits heat-trapping greenhouse gases (GHGs) that are the primary current and historical cause of anthropogenic climate change; this has been settled science for decades. Global concentrations of GHGs, including carbon dioxide and methane, have reached record levels. In 2024, for the first time, the global average temperature exceeded 1.5°C above pre-industrial levels.

Despite commitments made under international climate agreements and repeated calls by UN officials to urgently phase out fossil fuels, government action to limit their use and production, and to curb the flow of taxpayer money to the fossil fuel industry, has been wholly inadequate. Meanwhile, the industry has been intensifying efforts to lock in profits, disinform, and exert undue influence in climate policy forums. Without urgent action to stabilize and reduce GHG emissions, global heating will dramatically accelerate, making extreme weather events and unnatural disasters more intense and more likely, with grave human rights implications for billions of people and the critical ecosystems on which we all rely.



Youth climate activists calling for change in Manila (Philippines), August 2023 © Youth for Climate Hope Philippines

Amnesty International's new research demonstrates that, in addition to irreversibly altering the climate system, the full lifecycle of fossil fuels destroys critical natural ecosystems and undermines human rights, particularly of fenceline communities (those living near fossil fuel infrastructure). The research, as presented in this report, illustrates the ways in which fossil fuel projects feed into systemic patterns of exclusion, including through the disenfranchisement of environmental human rights defenders and communities fighting polluting infrastructure, and in some cases, outright silencing, intimidation or violence. It provides yet more evidence of the imperative for states and corporate actors to defossilize the global economy in order to mitigate the worst impacts of the climate crisis on the enjoyment of human rights.

As this year's host, the government of Brazil envisions that the global climate summit COP30 will be a historic forum for the meaningful participation of forest peoples, including Indigenous Peoples and traditional communities, and has called for greater multilateral climate action.[10] This research responds to that vision by exposing the human rights impacts of fossil fuel infrastructure on some Indigenous Peoples and traditional communities and by highlighting the resistance they are mounting. It also reveals the enormous scale, both in geographic and population terms, of the risks posed by fossil fuels throughout their lifespan. While the fossil fuel industry and its state sponsors have argued for decades that human development requires fossil fuels, the opposite is true. Given the globalized nature of the fossil fuel economy and the fact that the atmosphere, biosphere and oceans are a global public good, multilateral action is essential to protect human rights and sustainable development from climate chaos and polluting infrastructure.

B. METHODOLOGY

This report documents the climate and human rights harms of fossil fuel extraction, processing, transportation and decommissioning on fenceline communities and critical ecosystems. It takes a multijurisdictional approach and includes direct testimonies from individuals and groups affected by fossil fuel projects across the Americas and West Africa. To understand the interplay of global and local impacts, Amnesty International combined qualitative and quantitative methods throughout this research, partnering with data scientists from Better Planet Laboratory (BPL) and Columbia Law School's Smith Family Human Rights Clinic.

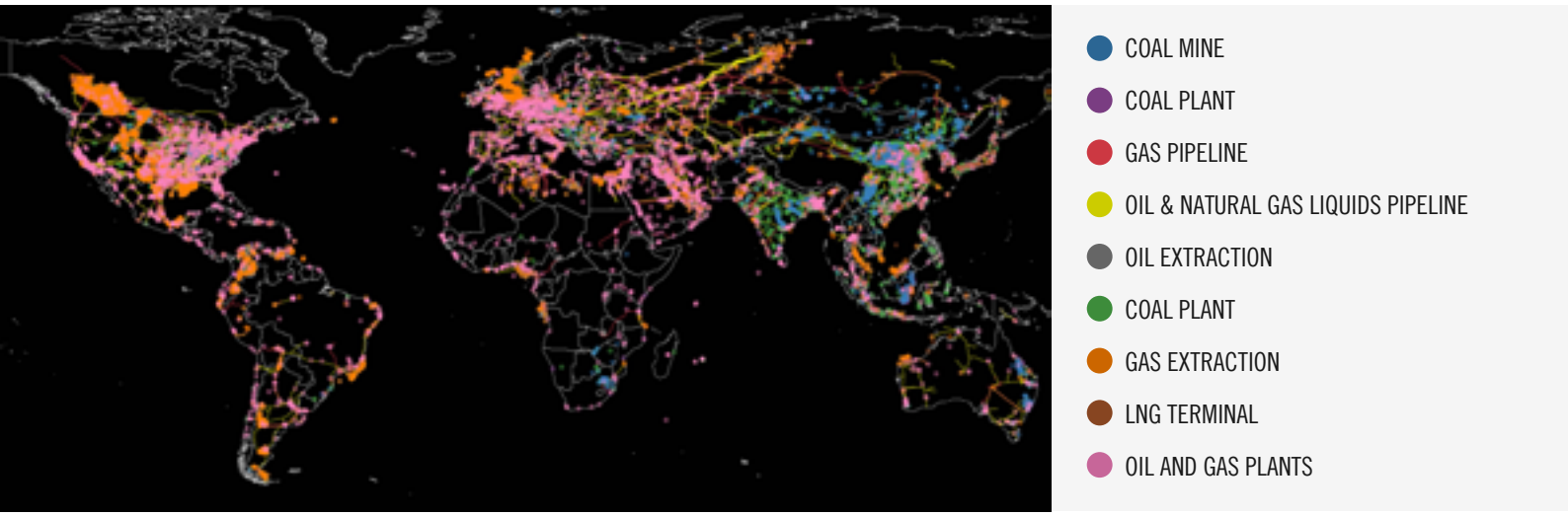
Amnesty International selected three project sites to serve as case studies at which its local staff could conduct research on the ground: Brazil (Guanabara Bay), Canada (Wet'suwet'en territory) and Senegal (Saloum Delta). In total, Amnesty International and its partners interviewed 91 people, including 40 directly affected people through group or individual interviews, three allies supporting fenceline communities, 16 representatives of regional or local government officials, 11 academics, 19 representatives of CSOs and two journalists.

In addition to conducting original research for these three case studies, this report also includes snapshots from past and ongoing research conducted by Amnesty International in Ecuador, Colombia and Nigeria.

C. GLOBAL MAPPING

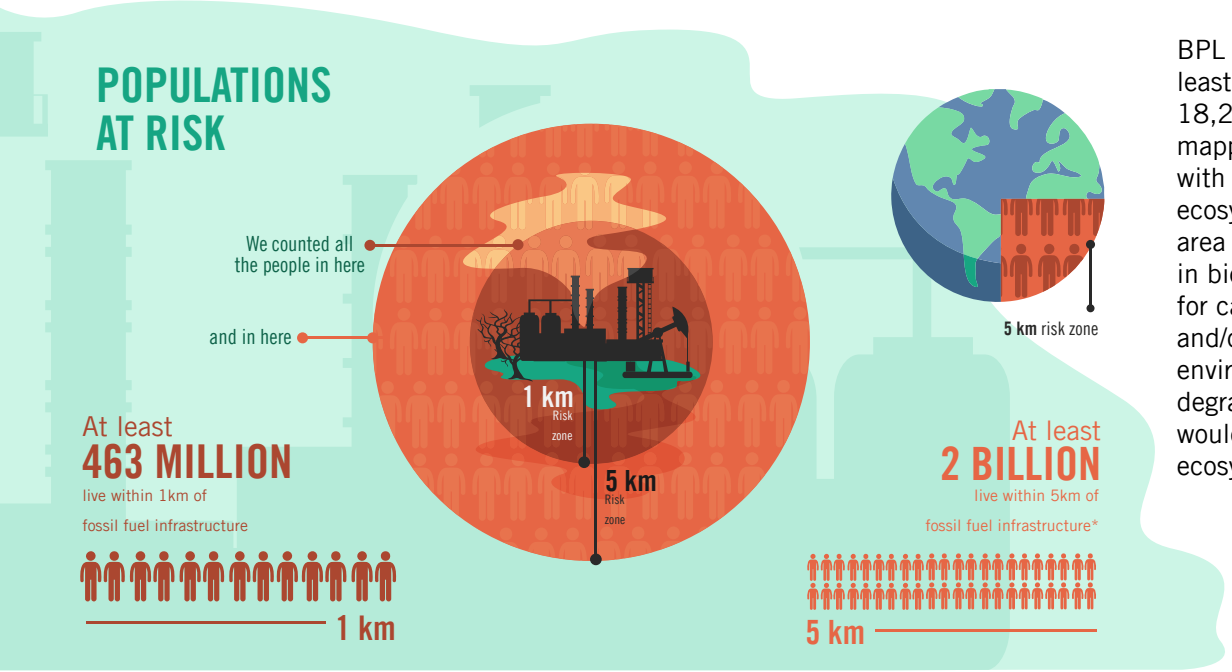
The case studies provide narrative examples of how fossil fuel infrastructure has damaged human rights, helping readers to understand their human cost. However, these case studies are but a few examples of a global problem. Amnesty International partnered with data scientists from Better Planet Laboratory (BPL) to understand the potential scale of populations and ecosystems exposed to risk of harm from fossil fuel infrastructure globally.

BPL estimates that at least 463 million people, including 124 million children, live within 1km of 18,273 currently operating fossil fuel infrastructure sites. In addition, BPL estimates that at least 2 billion people, roughly a quarter of the world's population, live within 5km of these fossil fuel infrastructure sites, including more than 520 million children.



Map showing the locations of more than 18,000 known operational fossil fuel sites, colour-coded by infrastructure type © Better Planet Laboratory

Proximity to fossil fuel infrastructure has been associated with elevated risks of cancer, cardiovascular illness, bronchitis, asthma, adverse reproductive outcomes (congenital abnormalities, low birth weight, pre-term birth), and anxiety and depression, among other negative health outcomes. BPL found that, despite representing less than 5% of the global population, at least 16.1% of known global fossil fuel infrastructure is sited on Indigenous territories. An additional 3,507 fossil fuel infrastructure sites are ither proposed, in development, or under construction globally. These planned fossil fuel sites will put at least 135 million additional people at risk living within 1km.



BPL also found that at least 32% of the existing 18,273 fossil fuel sites mapped overlapped with one or more critical ecosystems, meaning an area that is either rich in biodiversity, critical for carbon sequestration and/or where continued environmental degradation or disasters would trigger cascading ecosystem collapse.

D. KEY CASE STUDY FINDINGS

BPL's global mapping starts to show the scale of people living in close proximity to fossil fuel infrastructure. The case studies reveal the way those risks result in harm to many human rights and critical ecosystems, and how government failure to protect the rights to a clean, healthy and sustainable environment, access to information, Indigenous Peoples' cultural rights and right to self-determination as well as the right to effective remedy result in sustained exclusion and harm.

All the individuals and groups interviewed by Amnesty International reported that infrastructure to extract, transform or transport fossil fuels severely eroded the territorial integrity of the land, air and waters on which they live and rely. Indigenous Peoples and traditional communities in particular described the development of such infrastructure as an existential threat, in part because of their unique relationship with the natural ecosystems being destroyed.

Some of the affected groups interviewed described extraction as a form of economic or cultural pillage, perpetrated by corporate actors through intimidation and coercion, often lacking adequate oversight from government authorities.



(Left) Contaminated land surrounds the Bomu Manifold, a Shell facility at Kegbara Dere (K-Dere), Rivers State (Nigeria), years after spills occurred, 2015 © Amnesty International



(Right) The hand of a youth activist from Ecuador holding up an insect against a gas flare, 2020 © Unión de Afectados y Afectadas por Texaco

Most of the projects investigated by Amnesty International created pollution hotspots, turning host communities and critical ecosystems into sacrifice zones. Affected groups and environmental human rights defenders interviewed for this research identified the health and environmental risks their communities face, as well as the lack of response from the authorities to their human rights concerns, as the result of environmental racism. All environmental human rights defenders interviewed faced severe safety and security risks in connection with their climate and environmental justice campaigning activities.

Finally, members of fenceline communities interviewed condemned the lack of direct and meaningful consultation and transparency from corporate actors threatening their air, land and water. Many reported not fully understanding the scope of operators' ongoing activities or expansion plans and stated that they had not consented to projects affecting their territory.

E. SNAPSHOTS FROM THE AMERICAS

1. BRAZIL

a) Fossil fuel sector

Brazil is the world's seventh largest oil exporter, and its exports are rising.[11] Although Brazil has invested heavily in alternative forms of energy for its own domestic electricity needs,[12] successive governments have increased fossil fuel extraction for export. As of November 2024, the state-owned company Petrobras claimed that it accounted for 98% of Brazil's oil production.[13]

Brazil's failure to meaningfully transition away from fossil fuel extraction and production breaches both Brazil's treaty law and customary obligations pertaining to the protection of the climate system and human rights. As the host of COP30, Brazil's climate commitments and leadership stand in sharp contrast to the centrality of fossil fuels in its national economy

b) Guanabara Bay

Located in the state of Rio de Janeiro, Guanabara Bay is the second largest bay in Brazil.[14] Within or bordering Guanabara Bay are two ports as well as multiple shipyards and storage tanks, several refineries, dozens of pipelines, and terminals for refuelling and other fuel processing and vessel maintenance services. This infrastructure has turned the bay into a "pivotal region in the national oil and gas industry",[15] servicing oil and gas fields based more than 200km offshore. While several Brazilian and multinational oil and gas companies operate in Guanabara Bay, over the years, infrastructure operated by Petrobras and its fully owned logistics subsidiary Transpetro have shaped Guanabara Bay's waterways and onshore processing landscape.[16]



Artisanal fishers dock their boats below a busy highway in the neighbourhood of Maré in Rio de Janeiro (Brazil), February 2025 © Amnesty International (photographer: Matias Maxx)

Pollution in Guanabara Bay is widespread and comes from multiple sources including the oil and gas industry, solid waste from other industrial activity and untreated sewage, among others.[17] Fenceline communities that rely on the bay's watershed or live near industrial infrastructure onshore are therefore confronted by the cumulative impact of multiple sources of harmful industrial and non-industrial pollution.

c) Findings

In February 2025, Amnesty International spoke to numerous artisanal fishers who live and fish across various parts of Guanabara Bay, as well as Rio State environmental regulators, prosecutors, academics, journalists, and CSO representatives. Amnesty International wrote to Petrobras and its fully owned subsidiary Transpetro, in addition to national authorities. Only Brazil's National Agency for Petroleum, Natural Gas and Biofuels and the Brazilian Institute of Environment and Renewable Natural Resources replied to Amnesty International in October 2025; their views are reflected in the report.

Artisanal fishers interviewed expressed overwhelming concern about continued oil spills and the cumulative effects that such pollution has on the health of the water, fish, mangroves and people. For example, an artisanal fisher from the neighbourhood of Maré in Rio de Janeiro told Amnesty International: "I see oil in the water nearly every day, we see those stains, we talk, we complain to the authorities, but there's no law, no justice, there's impunity."[18] Many also described losing access to the key fishing areas and disturbance to the marine ecosystem.



Artisanal fishers preparing their boats in the neighbourhood of Maré in Rio de Janeiro (Brazil), February 2025 © Amnesty International (photographer: Matias Maxx)

Environmental regulators acknowledged the limitations of the resources at their disposal to monitor the environmental impacts of the oil and gas industry across Guanabara Bay's watershed. "We know about spills because of population reports – journalists, morning news from companies operating, from people. We don't have people who patrol the bay. The other way is social media," shared an employee of INEA, the Environmental Agency of the state of Rio de Janeiro.

The compounded effects of pollution and economic marginalization have turned Guanabara Bay into a sacrifice zone, violating artisanal fishing communities' rights to a clean, healthy and sustainable environment and to remedy.

Several environmental human rights defenders interviewed by Amnesty International reported fearing for their safety – some experiencing both in-person and online intimidation and harassment – and complained about the limitations of Brazil's national protection programme. Alexandre Anderson de Souza, an artisanal fisher and environmental human rights defender who coordinates the Association of Men and Women of the Sea (AHOMAR) in Guanabara Bay, explained: "Since last year, we've been working as a network to reduce threats. AHOMAR doesn't sign anything alone, we have representatives of quilombolas and farmers who work with us, this is a way not to be targeted individually."[19]



Portrait of Alexandre Anderson de Souza, Rio de Janeiro (Brazil), February 2025
© Amnesty International (photographer: Matias Maxx)

Since its establishment in Guanabara Bay, the activities of Petrobras and its subsidiary Transpetro have contributed to environmental pollution and degradation throughout the bay. In line with its responsibility to respect human rights, the state-owned company should investigate and remediate all adverse human rights impacts to which its onshore and offshore operations have contributed, particularly its impacts on artisanal fishers and other traditional communities relying on Guanabara Bay's watershed.

2. CANADA

a) Fossil fuel sector

The government of Canada self-describes as "a leader in oil and gas production, being the world's fourth largest producer of crude oil, and fifth largest producer of natural gas."[20] Despite active opposition from Canadian CSOs, the government of Canada continues to heavily subsidize the fossil fuel industry.

In recent years, Canada has increased its investment in so-called liquefied 'natural' gas projects, embracing the fossil fuel industry's misleading narrative that fossil gas is a 'clean transition fuel'.[21] Canada is currently home to seven fossil gas export projects, all located in the province of British Columbia (BC).[22]

Canada's continued investment and subsidies to the oil and gas sector counteract the country's heightened responsibility, as a high-income, historically high GHG emitter, to mitigate the climate crisis. Canada's failure to decarbonize its economy and its active investment in the fossil gas sector breach both the country's treaty law and customary obligations pertaining to the protection of the climate system.

b) Wet'suwet'en land defenders oppose Coastal GasLink

Since 2022, Amnesty International has been accompanying members of the Wet'suwet'en Nation in their land defence against the Coastal GasLink (CGL) fossil gas pipeline project. The pipeline, owned by Coastal GasLink Pipeline Ltd., TC Energy Corporation (formerly TransCanada), Kohlberg Kravis Roberts & Co (KKR) and Alberta Investment Management Corporation (AIMCo) is intended to transport fossil gas extracted from the Dawson Creek area in BC to an export facility near Kitimat, BC, to be exported to Asia.[23] All five Wet'suwet'en clans oppose the construction and operation of the CGL pipeline.[24] Past research by Amnesty International has determined that the consultation process for the CGL pipeline breached the Wet'suwet'en Nation's collective right to consultation in order to obtain its free, prior and informed consent to the project, as well as the Nation's right to self-determination.[25] Nevertheless, to proceed with construction of the pipeline, the Royal Canadian Mounted Police (RCMP), its Critical Response Unit and CGL's private security firm, Forsythe Security, have intimidated, harassed and unlawfully surveilled Wet'suwet'en land defenders.[26]



Illustration of the Wet'suwet'en Nation's frontline produced for Amnesty International in 2023 © Tercer Piso/Amnesty International

At the time of publication, CGL's pipeline is operating with a single compressor station (infrastructure that increases gas pressure for faster transportation). As part of its proposed Phase II, CGL plans to build six additional compressors to double the capacity of the pipeline.[27] Two of these compressors, known as Titanium Peak and Parrott Lakes, are planned on Wet'suwet'en territory and will each require between 0.2km^2 and 0.29km^2 of land.[28]

c) Findings

In April 2025, Amnesty International researchers travelled to the town of Smithers, BC, to meet with members and representatives of the Wet'suwet'en Nation and to better understand the risks associated with the construction of compressors planned as part of CGL's Phase II. Researchers reviewed satellite imagery to determine construction timelines and corroborate information from interviews. Amnesty International also wrote to BC environmental authorities and companies with ownership stakes in the CGL project. In October 2025, Coastal GasLink Pipeline Ltd. replied to Amnesty International on behalf of Kohlberg Kravis Roberts & Co, Alberta Investment Management Corporation (AIMCo) and TC Energy.[29] Their views are reflected throughout the report.

The Wet'suwet'en Hereditary Chiefs, on behalf of their clans, told Amnesty International that they never gave their consent for the construction or operation of the CGL pipeline, including the compressors. Tsakë ze' Howilhkat (Freda Huson), an Unist'ot'en Wing Chief, told Amnesty International that, after an initial meeting with CGL about the compressor: "We stopped communicating with them, because they [CGL] interpreted it as consultation. We've never ever agreed or consented to any of this."[30]



Aerial view of the area cleared to make way for the Parrott Lakes compressor station, April 2025 © Amnesty International (photographer: Alli McCracken)

As is evident from the April 2025 drone footage Amnesty International captured of the two areas deforested to build the proposed compressors, their construction represents a significant degradation and erosion of Wet'suwet'en territory and will limit Wet'suwet'en members' access to large tracts of their ancestral land. Environmental damage associated with the proposed compressors will not only affect the territory of host clans, but the whole Nation's ancestral land use and management system, specifically the ability to access and use other clans' territories for cultural and subsistence activities.

Amnesty International also found that continuous air pollution, noise, vibration and bright lighting from compressor stations risks driving moose, bears and fur-bearing animals away from established hunting and trapping areas, disrupting the seasonal hunts and trapping lines that contribute to Wet'suwet'en food security, culture and land-based teaching. New roads, dust from resumed construction work and heavy traffic around the sites could further fragment traditional trails and sacred places, including berry patches that supply clan feasts and areas for harvesting medicinal plants. Tsakë ze' Howilhkat (Freda Huson) told Amnesty International: "In Canada, we promised First Nations that they have the right to be able to continue their traditional lifestyle. And for a majority of people in the world now, I guess, there's a complete failure to understand the importance of the land staying ecologically intact, so that people can hunt animals, fish, gather mushrooms and… animals and have medicines. And in order to be able to do that in different places, the land has to stay intact ecologically and CGL has been destroying it. So, for traditional hunter-gatherers, this is the destruction of their existence."[31]

The proposed compressors will also bring a large industry presence and the construction of "man camps" (worker accommodation), and likely a heavy police and private security presence as well. As experienced during the pipeline construction, members of the Nation anticipate hostile behaviour from construction workers, security personnel and RCMP officers establishing checkpoints, conducting surveillance, following members of the Nation, and potentially restricting access to the land.[32] Skiy ze' Dr. Karla Tait told Amnesty International that: "The ways [employees of CGL and Forsythe Security] interact with us, in aggressive, intimidating or suggestive ways, makes us feel unsafe."[33]

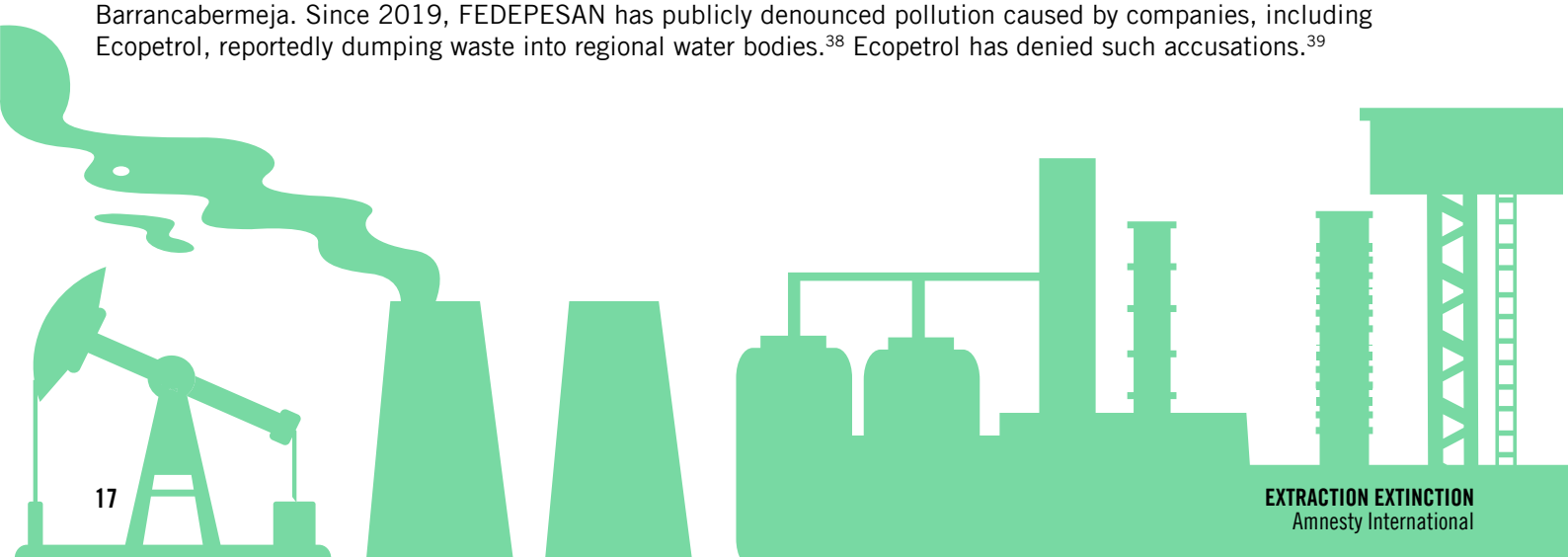
Amnesty International found that members of the Wet'suwet'en Nation's right to health, especially mental health, and integrity of the person have been seriously undermined and would be violated by the construction of new fossil fuel infrastructure on their territory. Wet'suwet'en land defenders interviewed have experienced and continue to experience both physical and psychological impacts as a result of the first phase of construction of the CGL pipeline, including stress, anxiety, weight loss and depression.[34] The situation has caused and continues to cause many feelings of powerlessness, anger, sadness, disappointment, fear and worry.[35]

Both BC's regulatory authorities and CGL should halt plans to build compressors on the Nation's territory, unless they obtain the Nation's consent and can demonstrate that such infrastructure development will have no health or environmental cost to the Wet'suwet'en people or the integrity of their ancestral land.

3. COLOMBIA

At the heart of Magdalena Medio – one of Colombia's largest wetlands – lies the country's largest oil refinery, the Barrancabermeja Refinery, operated by Ecopetrol SA (Ecopetrol) in Barrancabermeja city.[36] Ecopetrol is majority state-owned and is Colombia's largest integrated oil and gas company.[37] The refinery is surrounded by numerous oil wells. Lake Miramar, which flows into the river Caño Rosario, runs alongside the refinery and into the river Caño San Silvestre, a vital corridor for biodiversity and for artisanal fishers, including those from the Federation of Artisanal, Environmental and Tourist Fisherfolk of the Department of Santander (FEDEPESAN).

FEDEPESAN brings together around 500 fishing families that depend on artisanal fishing in lakes and rivers around Barrancabermeja. Since 2019, FEDEPESAN has publicly denounced pollution caused by companies, including Ecopetrol, reportedly dumping waste into regional water bodies.[38] Ecopetrol has denied such accusations.[39]





Yuly Velásquez, President of the artisanal fishers' association FEDEPESAN, May 2024 © Natalia Bronny

Yuly Velásquez, FEDEPESAN's president, has led a courageous fight against water pollution and corruption. Amnesty International has documented a series of violent incidents against Yuly Velásquez and her colleagues since the beginning of their activism, illustrating the severe risks and threats faced by environmental human rights defenders.[40] In Yuly Velásquez's words, "defending our rivers and wetlands – and the environment in general – from corruption and pollution means risking our lives."[41]

4. ECUADOR

Ecuador is one of Latin America's leading crude oil producers. Oil is the country's largest export,[42] leaving Ecuador's economy heavily reliant on fossil fuels.[43] Since 2019 when Ecuador submitted its first nationally determined contribution (NDC) – the country's action plan to reduce GHG emissions in accordance with the Paris Agreement – there has been some recognition nationally that routine gas flaring from the Ecuadorian oil sector contributes to climate change.[44] Regrettably, Ecuador's 2025 NDC did not include any action to further curtail routine gas flaring.[45]



Gas flare in the Ecuadorian Amazon, June 2024 © Amnesty International (photographer: Iván Martínez)



Action day by the Guerreras por la Amazonía (Warriors of the Amazon) outside the Constitutional Court in Quito (Ecuador), August 2025 © Amnesty International

Fenceline communities have long called for more ambitious action. The grassroots collective Eliminen los Mecheros, Enciendan la Vida (Remove the Flares, Ignite Life) has campaigned for years against routine gas flaring in the Amazon.[46] As part of this community-led effort, in 2020 a group of nine Amazonian girls and young women known as Guerreras por la Amazonía (Warriors for the Amazon, GxA),[47] together with the Unión de Afectados y Afectadas por Texaco (Union of People Affected by Texaco, UDAPT), filed and won a constitutional injunction against the state permits allowing public and private oil companies to operate gas flares.[48]

Amnesty International's research has revealed that the state-owned oil company Petroecuador failed to comply with this groundbreaking ruling and continues to operate gas flares in the Ecuadorian Amazon, harming the health and environment of fenceline communities.[49]

F. SNAPSHOTS FROM WEST AFRICA

1. SENEGAL

a) Climate change and fossil fuel exploration

Senegal is particularly vulnerable to the adverse effects of climate change. While most of the country has a dry, desert climate, 70% of the population lives on the coast where fishing is a vital industry.[50] In recent years, Senegal has joined a growing number of sub-Saharan African countries in promoting oil and gas to boost the domestic economy.[51] There are currently three oil and gas projects underway in the country: the Greater Tortue Ahmeyim, Yakaar-Teranga and Sangomar projects.[52]

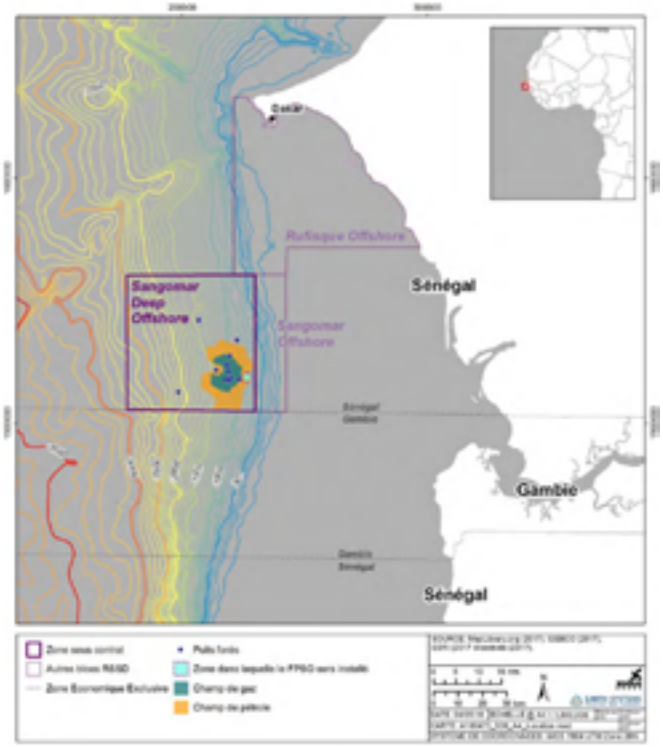


Prawn artisanal fishers in the Saloum Delta (Senegal), 2023 © Photo by John Wessels /AFP via Getty Images

In February 2025, Amnesty International researchers travelled to the Saloum Delta in west-central Senegal to assess existing and potential human rights impacts associated with climate change and the Sangomar project on local communities. Amnesty International also wrote to Senegal's Ministry of Energy, Mines and Petroleum, the fossil fuel company Woodside Energy and the non-profit Wetlands International. Woodside Energy Senegal replied to Amnesty International in October 2025; the company's views are reflected throughout the report.

b) Sangomar project

Listed among UNESCO's World Heritage Sites,[53] the Saloum Delta is one of the world's largest wetlands, spanning 1,800km^2 and containing vast mangrove forests. The delta comprises more than 200 islands with unique biodiversity in bird, fish and plant life.[54] In recent years, the Saloum Delta has become host to Senegal's first offshore oil and gas project, the Sangomar project, which is located about 100km south of the country's capital, Dakar.[55]



The Sangomar project is being developed by the Rufisque Offshore, Sangomar Offshore and Sangomar Deep Offshore (RSSD) joint venture, comprising Woodside Energy (Senegal) B.V. (Woodside) and Societé des Petroles du Sénégal (PETROSEN).

Map excerpted from the Environmental and Social Impact Assessment of the Sangomar project © Woodside Energy

c) Findings

Woodside claims to have consulted coastal communities who may be affected by the Sangomar Project. It also told Amnesty International that the company communicates environmental risks through "a range of targeted activities… carefully tailored to suit diverse audiences including local authorities, community groups, and other relevant stakeholders to ensure that the messaging shared is relevant, accessible, and effective in promoting awareness and informed participation".[56]

However, local authorities, CSOs and artisanal fishing groups to whom Amnesty International spoke condemned the lack of direct channels of communication with Woodside and expressed confusion about the potential environmental and socio-economic impacts of the Sangomar project. This suggests possible shortcomings in the consultation process, indicating a need for meaningful consultation with all potentially affected rights-holders and greater access to information.

2. NIGERIA

In 1956, Shell first discovered oil in commercially viable quantities in Nigeria, when the country was still under British colonial rule. Before long, Shell operated more than 1,000 wells in 90 oil fields covering an area of 31,000km^2 across the Niger Delta. During the 1990s, Shell reported that its annual profit from oil production in Nigeria averaged USD 220-240 million, some 7% of Shell's total worldwide profits from exploration and oil production.[57]



Oil on a creek water's surface near an illegal oil refinery in Ogoniland, outside Port Harcourt, Niger Delta (Nigeria), 2011 © AP/Sunday Alamba/Alamy

In November 1993, General Sani Abacha seized power in a military coup. Amnesty International has documented Shell's involvement in human rights violations in Nigeria and its close relationship with the Nigerian military.[58]

The Niger Delta is Africa's most valuable oil-producing region. For more than five decades, Shell and other international oil giants have earned billions of US dollars from their operations in the delta,[59] while local communities including the people of Ogoniland have struggled against oil pollution and the destruction of their ecosystem.[60] Amnesty International's research has revealed how oil extraction in the Niger Delta, and Shell's operations in particular, have turned the region into a sacrifice zone.[61]

In March 2025, Shell completed the sale of its Nigerian subsidiary, Shell Petroleum Development Company (SPDC), to a consortium of five companies, four of which are based in Nigeria.[62] Despite international calls for Shell to complete a clean-up of decades of environmental degradation, including pollution that poses a grave risk to lives and livelihoods,[63] complaints have continued to the present day.



Environmental scientist Eraks Kobah showing Amnesty International Nigeria places in K-Dere where signs of environmental damage such as oil spills are visible, November 2024 © Amnesty International

4
KEY RECOMMENDATIONS

A. TO ALL STATES

- Urgently phase out, with a target to fully eliminate, fossil fuel production, use and subsidies, while ensuring affordable and sustainable energy for all, in line with respective responsibilities and capabilities.
- Endorse the call to adopt and implement a Fossil Fuel Non-Proliferation Treaty.
- Allocate adequate resources at national, regional and local levels to carry out ongoing monitoring of environmental and health impacts of fossil fuel projects, with the input of fenceline communities, throughout their lifecycle.
- Prevent and protect against human rights abuses by corporate actors, investigating allegations of corporate-related human rights abuses and holding corporate actors accountable when abuses have occurred.
- Guarantee the comprehensive protection of environmental human rights defenders.

B. TO PARTIES TO THE UNFCCC AND THE PARIS AGREEMENT

- Urgently develop new human rights-compliant NDCs that include clear pathways for a fast and equitable phase-out of all fossil fuels in line with the 1.5°C limit before 2050, with high-income, historically high emitters, other high-emitting G20 countries, and other high-income fossil fuel producers going furthest and fastest.
- Protect civic space, including at UNFCCC meetings, and strengthen safeguards for environmental human rights defenders.

C. TO ALL COMPANIES NAMED IN THIS REPORT

- Immediately investigate and address human rights and environmental risks and abuses documented in this report, in good faith, and in consultation with affected individuals and groups, and provide effective remedy where adverse impacts have been identified.

D. TO CGL, TC ENERGY AND OTHER OPERATORS OF THE CGL PIPELINE

- Immediately halt the construction of planned compressors and use of the Coastal GasLink pipeline in the unceded territories of the Wet'suwet'en Nation, and ensure that operations are not resumed without the free, prior and informed consent of the Hereditary Chiefs and their clans.

E. TO PETROBRAS



- Repair the damage caused by past and new oil and chemical spill incidents associated with Petrobras' operations that have been harming artisanal fishing communities throughout Guanabara Bay, including those affected by the 2000 spill who have not received reparations to date.
- Immediately halt offshore drilling exploration at the mouth of the Amazon River.

F. TO WOODSIDE ENERGY



- Strengthen available methods to disseminate accessible information about the Sangomar project to fenceline communities, particularly artisanal fishers, potentially affected by its operations and planned expansion.

5
TRIBUTE TO THE OGONI NINE

On 10 November 1995 the environmental human rights defenders known as the "Ogoni Nine" – Ken Saro-Wiwa, Baribor Bera, Saturday Dobee, Nordu Eawo, Daniel Gbooko, Barinem Kiobel, John Kpuine, Paul Levera and Felix Nuate – were executed following a blatantly unfair trial.[64]

Ken Saro-Wiwa, an acclaimed writer, had gained worldwide recognition for his leadership of the campaigning organization the Movement for the Survival of the Ogoni People (MOSOP). MOSOP had begun its campaign in 1990 with the publication of the "Ogoni Bill of Rights" which outlined the movement's grievances and demands.

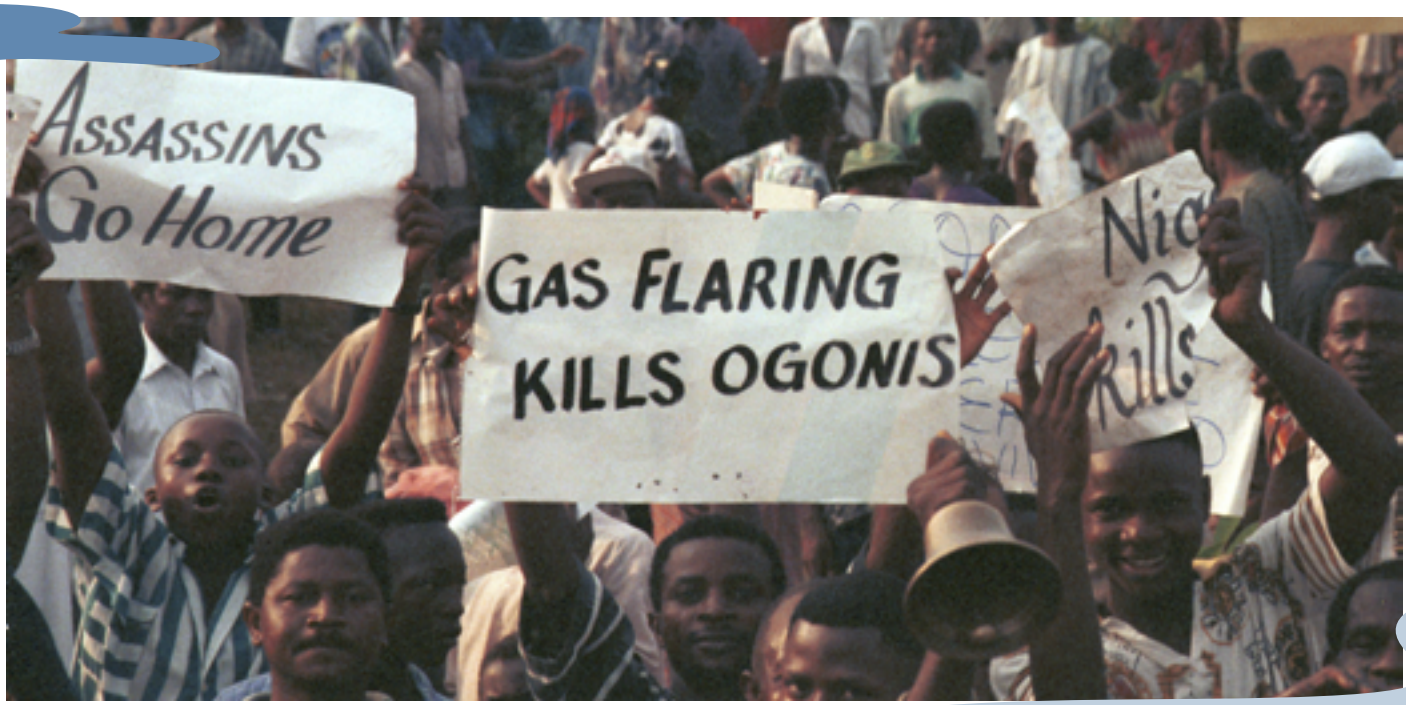
At the time, the Nigerian economy already relied heavily on oil production, which made up 95.7% of Nigeria's total exports. The government of Nigeria was afraid that MOSOP's campaign would be replicated by other fenceline communities across the country. Shell was at that time the biggest oil company operating in the Niger Delta.

In June 2025 the Nigerian government pardoned the Ogoni Nine. While Amnesty International welcomed this news, it fell short of the justice the Ogoni Nine and their families deserve.[65]



Ken Saro-Wiwa speaking at an Ogoni Day demonstration in the Niger Delta (Nigeria), March 1994 © Tim Lambon / Greenpeace

November 2025 marks the 30-year anniversary of the Ogoni Nine's arbitrary executions. Their courageous fight to protect the Niger Delta and condemn the inequitable extractive activities of international oil giants exposed the climate, human and environmental cost of the fossil fuel industry and lack of economic development in oil producing areas for the first time on a global scale. Amnesty International's climate justice research and global campaign to phase out fossil fuels takes inspiration from the work they started in the 1990s. Their fight continues and their memories have never been forgotten.



Ogoni Day demonstration in the Niger Delta (Nigeria), March 1994 © Tim Lambon / Greenpeace

6
ACKNOWLEDGMENTS

Special thanks to the environmental human rights defenders interviewed for this report. Despite the many physical, digital and psychological threats they face every day, they are boldly fighting to protect nature, their communities and our climate. This report aims to amplify knowledge and calls to action from leaders of Indigenous Peoples, traditional communities and minoritized groups on the frontline of the climate crisis. Amnesty International expresses the deepest gratitude to all individuals and groups directly and indirectly affected by fossil fuel extraction who have been willing to share challenging lived experiences and stories of resistance and resilience reflected in this report.

This report would not have been possible without many external contributors. Students and professors at Columbia Law School's Smith Family Human Rights Clinic assisted in the research and authorship of this report. Their dedication and ingenuity expanded the scope of this research and its findings. The entire team at Better Planet Laboratory helped turn an ambitious idea to demonstrate scale risk from fossil fuel infrastructure into a reality. They were generous with resources, time and expertise. Their creativity and collegiality allowed the simultaneous exploration of ambitious methodological and substantive questions.

Thank you to Amnesty International Senegal's intern and law student who brilliantly carried forward research in the Saloum Delta; our copy editor who shared policy expertise and writing skills that strengthened this report; and our graphic designers for their creative illustrations and typesetting.

Thank you to the numerous Amnesty International colleagues including advisers, researchers, campaigners and communications experts who generously contributed creativity, subject-matter and technical expertise through several rounds of collaborative discussions and reviews, enabling this report's production.

7
METHODOLOGY



This report documents the climate and human rights harms of fossil fuel extraction, processing and transportation on fenceline communities and critical ecosystems. It takes a multijurisdictional approach and includes direct testimonies from groups affected by fossil fuel projects across the Americas and West Africa. To understand the interplay of global and local impacts, Amnesty International combined qualitative and quantitative methods throughout this research.

Amnesty International selected three project sites to serve as case studies where Amnesty International offices could carry out on the ground research in: Brazil, Canada[66] and Senegal. Three teams of Amnesty International researchers, law students and clinical law professors travelled to Rio de Janeiro (Brazil), the Saloum Delta (Senegal) and Smithers (Canada) between February and April 2025.

In total, Amnesty International and its partners interviewed 91 people, including 40 directly affected people through group or individual interviews, three allies supporting fenceline communities, 16 representatives of regional or local government officials, 11 academics, 19 representatives of CSOs, and two journalists.

For each case study, researchers conducted an extensive document review including examining environmental impact assessments, and relevant domestic, regional and international laws (including case law). In addition, Amnesty International used digital investigation techniques to supplement and visualize claims from interviews. This included the use of satellite imagery and publicly available datasets.

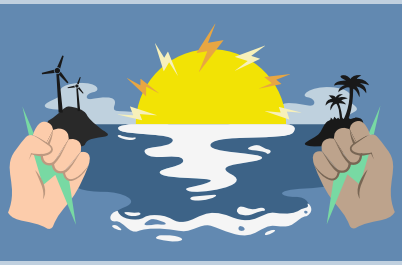
Amnesty International sent right of reply letters to companies and government entities mentioned in the new research findings presented in this report on Brazil, Canada and Senegal. Letters were written in the relevant spoken languages and provided the target companies and state actors with a clear overview of our findings as well as the opportunity to comment on or clarify any allegations included in the report. Amnesty International reflected all responses received in its final analysis throughout the report.

In addition to conducting original research on three case studies, this report also includes updates on pertinent past and ongoing research Amnesty International has carried out in Ecuador, Colombia, and Nigeria.
Amnesty International also partnered with data scientists from Better Planet Laboratory (BPL) to explore the scale of potential harm from fossil fuel infrastructure globally. There is no comprehensive global assessment of the number of people or ecosystems at risk from current and planned fossil fuel infrastructure. In consultation with Amnesty International, BPL used publicly available data to produce an original analysis of: (i) the total recorded number of fossil fuel infrastructure sites currently operating or in development by Global Energy Monitor, (ii) the estimated global population and vulnerable groups (such as children and Indigenous people) living in close proximity to such infrastructure and, (iii) the extent to which these infrastructure sites overlap with critical ecosystems (defined as natural environments that are rich in biodiversity, critical for carbon sequestration and/or where continued environmental degradation or disasters would trigger cascading ecosystem collapse). Amnesty International gave Amnesty International access to their findings ahead of publication of this data and a corresponding paper. BPL's findings are a first step in mapping complex global problems and are likely to be incomplete, especially in capturing marginalized communities or vulnerable biospheres that may not be well captured in existing datasets. Using these findings from BPL, Amnesty International contextualized the research presented in this report.

Researchers aimed to integrate a decolonial lens into research design, implementation, and reporting. However, Amnesty International acknowledges that as a large international NGO using conventional human rights fact-finding methods, the organization's deliverables generally fit within a legalistic paradigm of knowledge. More specifically, Amnesty International recognizes that certain research tools such as mapping or quantitative data analysis can flatten complex and interconnected concepts and has aimed to reflect such limitations throughout this report.

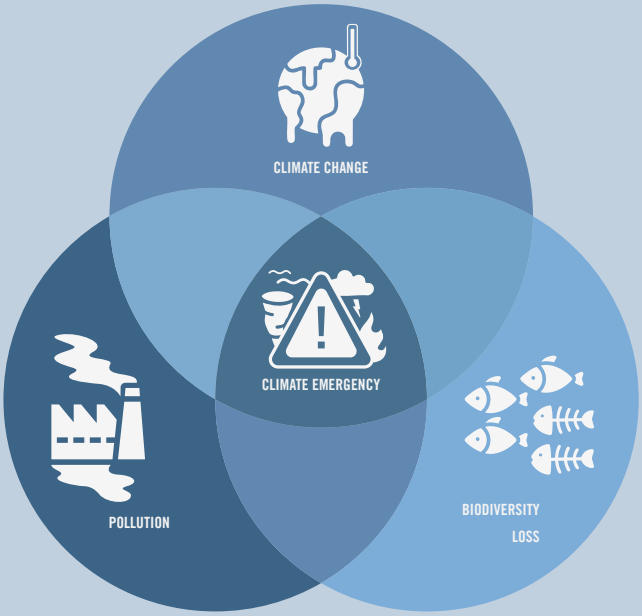
8
BACKGROUND

In July 2025, in a special address to UN member states, UN Secretary-General António Guterres declared that:[67]



"The fossil fuel age is flailing and failing. We are in the dawn of a new energy era. An era where cheap, clean, abundant energy powers a world rich in economic opportunity. Where nations have the security of energy autonomy. And the gift of power is a gift for all. That world is within reach. But it won't happen on its own. Not fast enough. Not fair enough. It is up to us. We have the tools to power the future for humanity."

In his remarks, the UN Secretary-General underscored that the energy transition "is no longer a promise, it is a fact".[68] These words illustrate a change not only in tone, but in policy orientation of the international community. There is an imperative to decarbonize the global economy and limit the devastating impacts of climate change. Indeed, the climate emergency has become an unprecedented global human rights crisis; part of the triple planetary crisis of the interrelated phenomena of climate change, pollution and biodiversity loss.[69]



Anthropogenic climate change involves not only a rise in the global average temperature ("global heating"), but also a range of disruptions to ecosystems. It leads to increased intensity and frequency of dangerous rapid-onset events, such as extreme heat, wildfires and extreme rainfall from tropical storms;[70] and triggers slow-onset events including drought, glacial melting, sea-level rise, salt-water intrusion and ocean acidification, while contributing to shifting wildlife populations and habitats and to biodiversity loss.[71]



The climate crisis is a manifestation and catalyst of deep-rooted injustices. It disproportionately affects individuals and groups who are marginalized as a result of historical and structural inequalities, including ingrained practices or official policies that unfairly distribute access to resources, services, power and privilege. At the same time, climate change is already undermining – or will undermine – the human rights of all but the wealthiest people on the planet.

A. ROOT CAUSE OF ANTHROPOGENIC CLIMATE CHANGE

The burning of fossil fuels – which leads to emissions of heat-trapping GHGs – is the primary cause of climate change today. This has been settled science for decades.[72] Attribution science has shown that rapid- and slow-onset weather and related events are made much more likely and more harmful by climate change.[73]

Global concentrations of GHGs – including carbon dioxide (CO_2) and methane (CH_4) – have reached record levels. Between 2022 and 2023, they increased by 1.3%,[74] a higher rate of increase than in the decade before the Covid-19 pandemic.[75] In 2024, global average temperatures exceeded 1.5°C above pre-industrial levels for the first time. This was significant because signatories to the Paris Agreement had committed to pursue efforts to limit the increase to 1.5°C, recognizing that crossing this threshold risked more severe climate change-driven harms.[76] Yet, instead of phasing out fossil fuels, the world continues to heat up, and fossil fuel companies continue to expand production. Without urgent action to stabilize and reduce GHG emissions, the Earth's climate is on course to be at least 2.8°C warmer by 2100, according to the Intergovernmental Panel on Climate Change (IPCC), the UN's climate science advisory panel (see Figure 2).[77] This has catastrophic implications for billions of people and for the world's natural ecosystems.

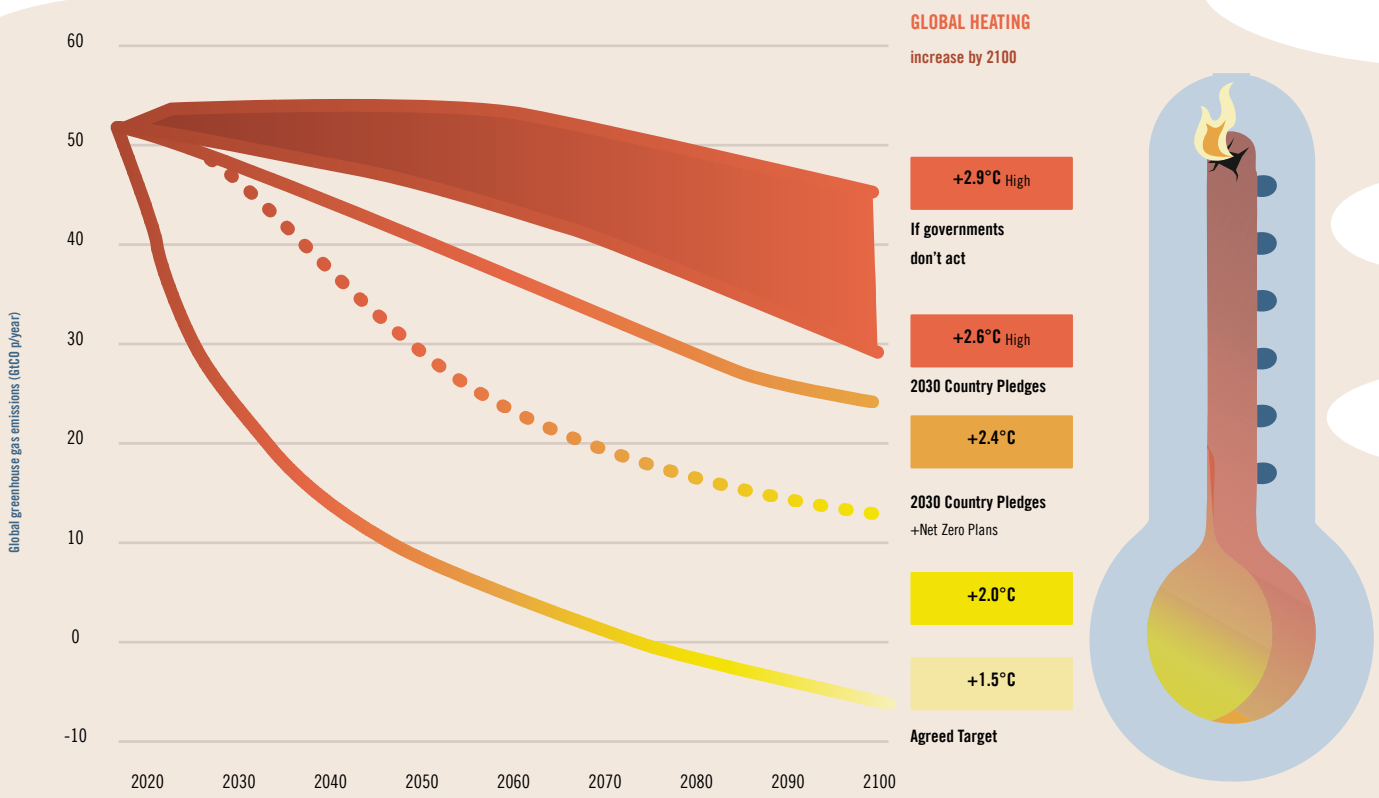


Figure : Global warming and projected greenhouse gas emissions under various scenarios. We are currently on course for a potentially catastrophic rise of almost 3°C in global temperatures this century.

In 2024, the United Nations Framework Convention on Climate Change (UNFCCC) published a review of states' latest mitigation plans. It showed that global efforts are falling short of what is required to limit heating to a 1.5°C increase in average global temperatures.[78]

In a recent report on the imperative to "defossilize" the global economy, the UN Special Rapporteur on the promotion and protection of human rights in the context of climate change (hereinafter referred to as the UN Special Rapporteur on climate change) stressed that: "Indirect greenhouse gas emissions released during fossil fuel extraction, transport and waste management also contribute to climate change. Fossil fuel production and distribution are the second-largest source (35%) of methane emissions, which are responsible for around 30% of the global temperature rise since the Industrial Revolution."[79]

B. ADVERSE IMPACTS ON PEOPLE AND NATURE



From extraction to processing, transportation and decommissioning, the full lifecycle of fossil fuels irreversibly alters the world's climate through the emission of heat-trapping gases, undermines the health and human rights of fenceline communities, and leads to environmental degradation that destroys irreplaceable natural ecosystems.

1. Consultation, access to information and public participation

Amnesty International's past research has revealed that many governments fail to guarantee the human rights of fenceline communities, including the rights of access to information, public participation, freedom of expression – which includes the freedom to seek, receive and impart information – and Indigenous Peoples' right to self-determination, requiring states to seek their free, prior and informed consent (FPIC) before fossil fuel production and expansion begins.[80] UN experts have recognized that "insufficient, flawed or manipulated community consultations fuel conflict and social tension, increasing risk of violence, including enforced disappearances and killings."[81]

Fossil fuel companies may use this lack of regulation or enforcement to their benefit, and proceed with their activities without meaningful and ongoing consultation of host communities, running afoul of their responsibility to respect human rights.[82] The UN Working Group on Enforced and Involuntary Disappearances has raised concerns regarding "the human cost of such enterprises' quest to enhance profit margins, or to maximize the benefits for their shareholders."[83]

2. Environmental human rights defenders

States are failing to protect environmental human rights defenders facing intimidation, physical attacks and digital threats[84] or retaliation for opposing the production and use of fossil fuels. The UN Working Group on Enforced and Involuntary Disappearances has found that "the rate of violence against human rights defenders in general, and against those acting in defence of land, natural resources and the environment in particular, has become a "truly global crisis".[85] These defenders "often face heightened risk due to intersecting vulnerabilities, the remote areas in which they work, the powerful economic interests they challenge, or their belonging to Indigenous or other marginalized communities."[86] The Working Group has also stressed that "[land, natural resource and environment defenders] face extraordinary danger because they are caught in between the world's most powerful corporate, financial, and government elites, and some of the world's most valuable natural resources."[87]

UN experts have recognized that women environmental human rights defenders "are frequently targeted with gender-specific forms of violence, including harassment, sexualized threats and defamation rooted in misogyny" and that "in many cases, they are not only punished for their land, natural resources or environmental defence, but also for transgressing patriarchal stereotypes."[88]

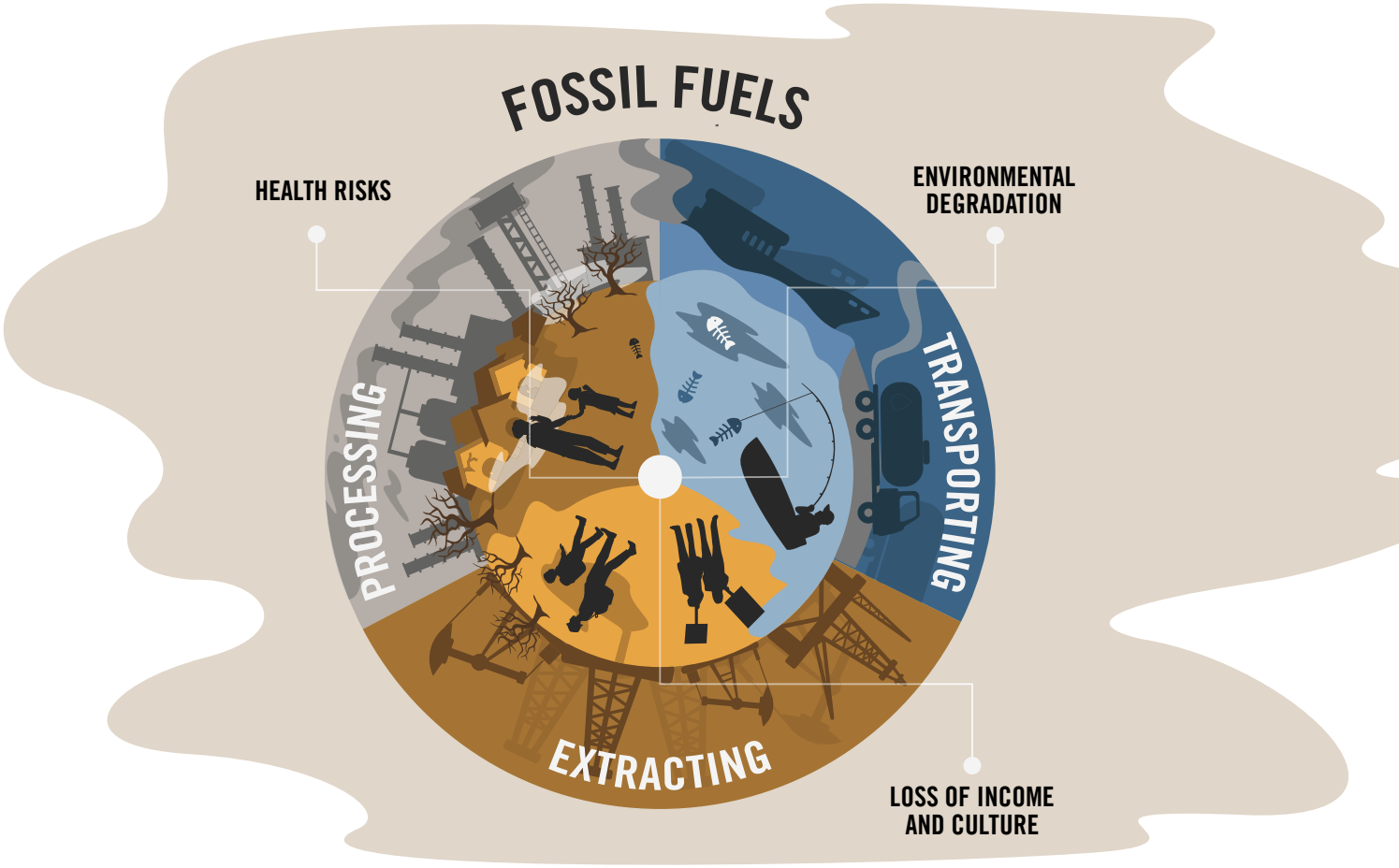
In some cases, states directly target environmental human rights defenders. States may surveil, discredit or criminalize defenders who oppose fossil fuel projects, often resulting in arrest, arbitrary detention and other violations of their rights.[89] States or the media may label those who oppose fossil fuel projects as "anti-development", "terrorists", or "eco-terrorists"."[90] The UN Special Rapporteur on the situation of human rights defenders has also established that "criminalization is used as a tool to repress peaceful activism opposing new fossil fuel infrastructure in the global South or in historically marginalized communities in the global North, with the infrastructure in question often being developed by companies headquartered in high-emitting States."[91]

UN experts have expressed particular concern regarding sectors such as the fossil fuel industry, where "State involvement and a high potential for profit create conditions conducive to corruption and disregard for the rights of communities on or near project sites. (…) In turn, [environmental human rights defenders] who assert the rights of affected communities, and who are seen by perpetrators as obstacles to project implementation, are targeted."[92]

A growing number of fossil fuel companies seek to silence defenders through smear campaigns, threats, attacks and intimidation tactics including judicial harassment.[93] UN experts have emphasized that "[c]onsidering the inequality of resources between [environmental human rights] defenders and transnational corporations and other business enterprises, for example, in terms of access to adequate and effective legal representation, this presents a significant challenge."[94]

States' formal recognition as human rights defenders of those who campaign to protect our climate system and their communities from the harms of the fossil fuel industry can help targeted activists and organizers access protection mechanisms, combat negative labelling or harassment, and reduce the risk of enforced disappearance.[95]

3. Environmental degradation and health impacts



The UN Special Rapporteur on climate change has identified specific activities of the fossil fuel industry that raise heightened human rights concerns.[96] Extracting, processing and transporting fossil fuels causes environmental degradation, severe health risks (particularly acute for children, pregnant and older people and potentially affecting the health of future generations), and loss of livelihood and culture for communities living in the vicinity of projects.[97] The fossil fuel industry occupies a vast area of the Earth's surface, and at times resorts to forced evictions to make way for infrastructure such as wells, pipelines and roads as well as facilities for processing and waste management.[98] As the case studies in this report illustrate, oil extraction, processing and transportation routinely entail irreversible spills, damaging ecosystems and destroying the biodiversity and means of subsistence of fenceline communities (see, for example, the Brazil case study and Colombia text box). Flaring and other processing activities release toxic air pollutants that harm the health of workers and neighbouring communities (see, for example, the Ecuador text box).[99]

C. DISPARATE IMPACTS



In many contexts, fossil fuel projects feed into systemic patterns of exclusion and oppression by entrenching structural inequalities, perpetuating environmental racism and sustaining extractivist and neocolonial economic practices.[100]



UN experts agree that extractive projects including fossil fuel production have a disparate impact on Indigenous Peoples and other marginalized groups. Such groups experience structural discrimination and, as a result, are more likely to reside on the fencelines of fossil fuel infrastructure. Many live in so-called "sacrifice zones," defined by a UN expert as places "where residents suffer devastating physical and mental health consequences and human rights violations as a result of living in pollution hotspots and heavily contaminated areas."[101]

In 2025, the UN Special Rapporteur on climate change similarly stated that:[102]

"There are clear patterns of discrimination against Indigenous Peoples, peasants and people of African descent in the fossil fuel lifecycle, with increased pollution, land grabbing and conflicts, disproportionate attacks against environmental human rights defenders from these groups, and forced displacement."



This trend is particularly concerning for Indigenous Peoples and many traditional communities, for whom "land and nature is not simply a resource, but a constitutive element of cultural identity."[103] More than as an exploitable resource, land and water may amount to a "sacred space, a core of identity at both individual and collective levels."[104]



THE CLIMATE CRISIS

Disproportionately affects people subjected to multiple and intersecting forms of intra and intergenerational discrimination.

ENVIRONMENTAL RACISM

The concept of environmental racism is based on the recognition that there are stark racial disparities in exposure to environmental harm. Environmental racism manifests in environmental policies, practices, laws or regulations that disproportionately disadvantage (intentionally or unintentionally) individuals, groups or communities based on race, skin colour, descent or national and ethnic origin. This also includes disproportionate impacts in the absence or inadequacy of environmental policies – such as those related to climate adaptation and mitigation – to protect these individuals, groups and communities.[105] The term emerged in response to the disproportionate concentration of environmental hazards in low-income communities and areas with racialized populations in the USA.[106]

In many instances, the uneven distribution of environmental hazards cannot be attributed to contemporary purposeful or intentional conduct, but results from historical racial injustices, including the legacies of colonialism and slavery, historic urban planning, and housing and lending practices that segregated certain groups and deprived them of economic and/or political influence to resist the siting of polluting industries in their communities.[107] For Indigenous Peoples, such concerns are often inextricably linked with struggles for self-determination and land rights.[108]

Over time, the notion of environmental racism has gained traction beyond the US context. In 2022, the UN Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance emphasized that: "Peoples in formerly colonized territories who were racially designated as non-white bear the disproportionate environmental burdens of extraction, processing and combustion of fossil fuels."[109]

The following year, the UN Working Group on Business and Human Rights held discussions on how to leverage the UN Guiding Principles on Business and Human Rights to tackle the root causes of environmental racism.[110] The Working Group stressed that: "The exploitation of natural resources that started in the colonial era and has subsequently been perpetuated by businesses and States – and for which former colonial powers have not been held accountable – is one of the root causes of the power and resource imbalances among States, and between racialised communities and white communities.[111] Power imbalance is also evident in the exclusion of racially marginalized peoples from decision-making and in racialized violence by States and businesses against environmental human rights defenders."

Environmental racism manifests in various ways across national and regional contexts featured in this report. For example, in Brazil, oil exploration and concession areas tend to overlap with the territories of marginalized communities, such as coral reefs and the Amazon River estuarvy basin, where Indigenous Peoples and riverside communities face environmental risks and contamination[112] from the expansion of the fossil fuel sector.[113] In Canada, a disproportionate number of people who live in environmentally hazardous areas are members of an Indigenous, racialized or other marginalized community.[114] Although the National Strategy Respecting Environmental Racism and Environmental Justice Act – which became Canadian law in 2024 – acknowledges this, it has been criticized for lacking concrete timelines, funding, accountability measures and reparations to effectively prevent and address environmental racism.[115]



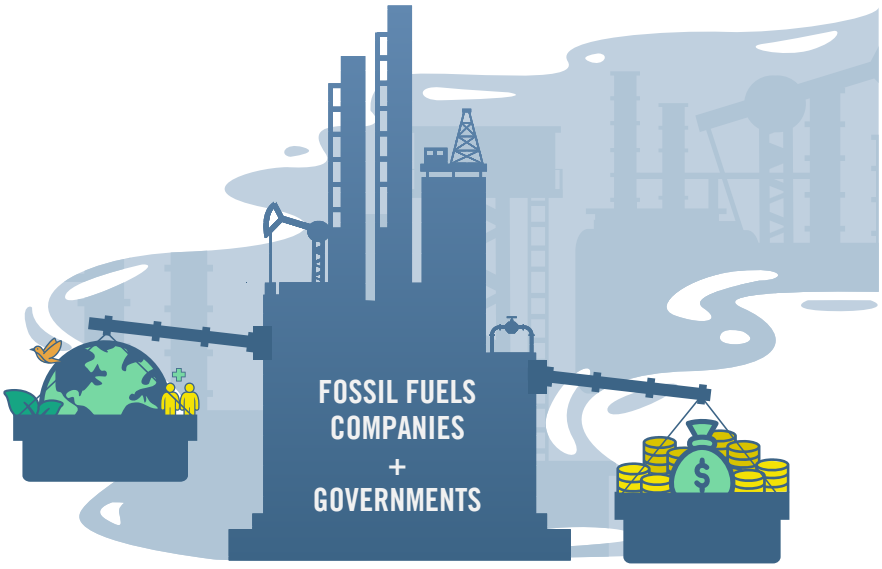
1. Carbon majors' responsibility

Research from InfluenceMap shows that, from 1854 to 2022, 70% of global CO_2 emissions can be attributed historically to 78 fossil fuel producers – both private and state owned – also known as the "carbon majors".[116] According to InfluenceMap's 2023 assessment,[117] the companies named in this report compare as follows:

Company name	Percentage of global (cumulative historic) emissions	Emissions ranking	Oil production ranking	Gas production ranking
Shell[118]	2.04%	9 out of 180	7 out of 88	5 out of 87
Petrobras[119]	0.57%	28 out of 180	17 out of 88	30 out of 87
PetroEcuador[120]	0.10%	104 out of 180	43 out of 88	84 out of 87
Woodside Energy [121]	0.05%	134 out of 180	64 out of 88	56 out of 87

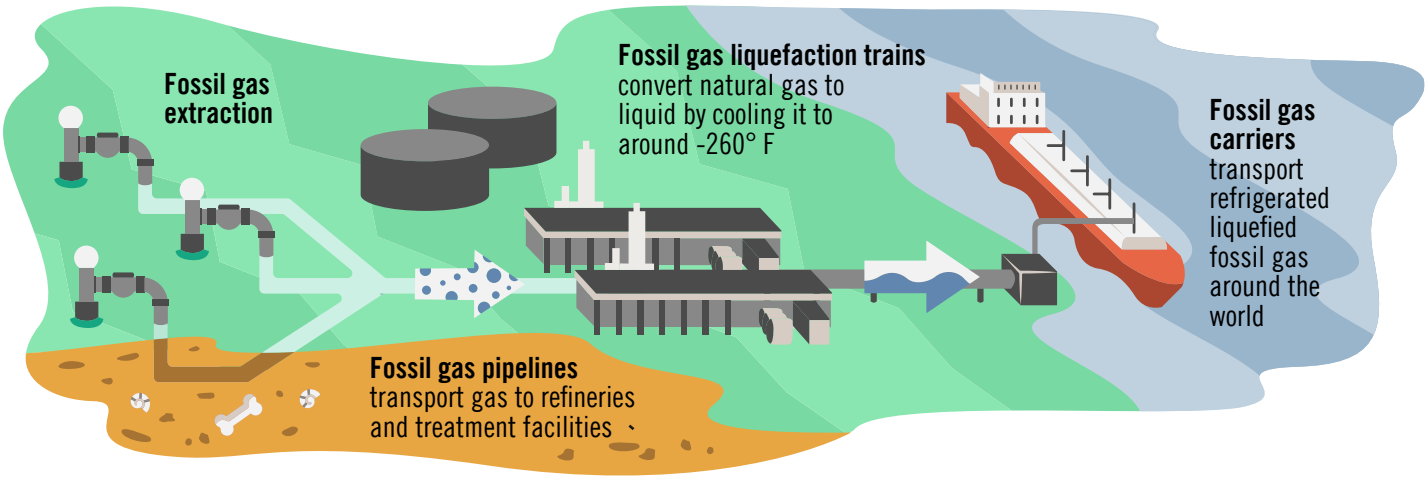
2. Plan B to lock in profits

Despite the need to decarbonize the global economy to mitigate climate change, the fossil fuel industry has been intensifying efforts to lock in profits and continue doing business as usual; they often successfully seek state support to do so. Over the past decade, the industry has invested particularly heavily in fossil gas and petrochemicals.



a) Fossil gas

Fossil gas (or so-called 'natural' gas) is primarily made of methane and conventionally obtained by drilling or through the use of hydraulic fracturing (commonly known as 'fracking'), an extraction process that injects highly pressurized water and chemicals underground to fracture rock formations.[122] Once extracted, the gas is usually transported through underground pipelines. When gas is destined for export internationally, it is typically converted into what the industry calls "liquefied natural gas" (LNG) and transported on tankers.[123]



LNG is methane that has been filtered and cooled to turn it from gas to liquid form. This process dramatically reduces the volume of fossil gas, making it easier and more efficient to transport it in large quantities.[124]

Despite common misperceptions – enabled by its branding as "natural",[125] methane is a potent GHG more than 80 times more effective at trapping heat than CO_2 over its first 20 years in the atmosphere. Emerging evidence suggests that the climate damage caused by fossil gas may be comparable to that of burning coal.[126]

The extraction and processing of fossil gas is also incredibly energy intensive and presents serious health and environmental risks, including damage to respiratory health and adverse birth outcomes.[127] Scientists have found that emissions of methane and other toxic gases are common when gas is transported via pipelines, which are subject to leaks and explosions.[128] Leaks also occur from compressor stations.[129] The fossil fuel industry markets fossil gas as a bridge fuel, indispensable to meet global energy needs as the world turns to more renewable energy sources. Among the companies named in this report, Petrobras "understand[s] the role of natural gas as the transition fuel par excellence".[130] Woodside Energy claims that "gas… helps meet one of the great challenges facing the transition to more renewable energy, like wind and solar, because gas can provide a reliable source of energy for when renewables can't meet demand. Supporting renewables, by backing them with gas, challenge accepted!"[131]

Coastal GasLink and its operator and partial owner TC Energy – companies also covered in this report – similarly boast that "LNG is an immediate solution to balancing global energy security, reliability, affordability and emissions reduction. It's a cleaner-burning, reliable, lower-carbon fuel".[132]

b) Plastics and other petrochemicals

Plastics – which are primarily made of non-renewable petrochemicals – and other petrochemical products are part of the fossil fuel industry's strategy to preserve profits in the face of the unavoidable decline in demand for fossil fuels as an energy source[133] Plastics and other petrochemical products "cause their own host of severe human rights impacts, worsening climate change, biodiversity loss and toxic pollution", according to the UN Special Rapporteur on climate change.[134]

At a time when international negotiations for the adoption of a global plastics treaty have stalled,[135] the UN Special Rapporteur on climate change has warned that: "Currently, primary plastic production accounts for 12.5% of global oil demand and 8.5% of global gas demand and is projected to account for 50% of global oil demand by 2050."[136]

3. Disinformation

Today, the fossil fuel industry's deliberate and concerted efforts to undermine people's rights to access to information, public participation and science are well-known. However, the international community has done too little to prevent the industry's undue influence in policy and legislative forums, including its silencing of environmental human rights defenders and its active sponsorship of disinformation.

In 2025 the UN Secretary-General explicitly condemned the industry's attempts to capture public discourse and regulatory processes, acknowledging that: "Of course, the fossil fuel lobby will try, and we know the lengths to which they will go. But, I have never been more confident that they will fail because we have passed the point of no return."[137]

Similarly, the UN Special Rapporteur on climate change has criticized the industry's dangerous "playbook," which "has negatively impacted the rights to information, education and science, undermining the exercise of civil and political rights and preventing effective human rights protection, for at least six decades".[138]

a) Climate change denialism

There is growing evidence that major fossil fuel companies have known for decades about the harmful effects of fossil fuel combustion and have attempted to suppress that information to keep the general public uninformed and to block efforts to tackle climate change.[139] An early strategy employed by fossil fuel companies and their trade associations was to sow doubt that fossil fuels caused climate change.[140] Despite evidence that ExxonMobil's climate modellers had predicted worsening impacts of the greenhouse effect with precision since the 1970s, its top executives challenged the IPCC's findings and explicitly urged its staff to influence and gather information about the UN body.[141]

Over time, many companies pivoted to portraying themselves as good-faith stakeholders and partners in global discussions about the climate crisis. Greenwashing, rather than outright lying, and shifting the focus to individuals' behaviour rather than collective solutions have become the industry's approach.[142]

b) Promoting unproven and dangerous solutions

The fossil fuel industry has also promoted risky and unproven mitigation solutions that risk not only delaying emissions reductions but also exacerbating the climate crisis.[143] Such 'solutions' include co-firing ammonia and hydrogen in power plants, promoting carbon capture and storage, large-scale carbon dioxide removal and geoengineering mechanisms, and opposition to the strict regulation of carbon market activities.

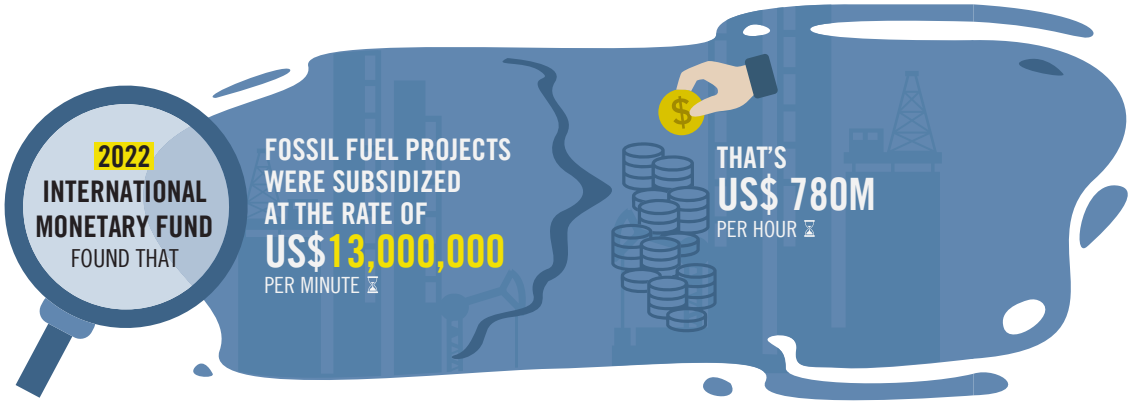
4. Climate obstruction

There is evidence of the prominent influence of fossil fuel companies in global-level discussions. For example, 1,773 fossil fuel lobbyists were granted access to the global climate conference COP29; a figure greater than the combined number of delegates from the 10 most climate vulnerable nations.[144] By contrast, the UN Special Rapporteur on the situation of human rights defenders has warned that "throughout [COPs] history, and in particular in recent years, human rights defenders have been systematically obstructed" from participating in climate negotiations.[145]

Companies bolster their direct engagement and efforts to influence global policy discussions with more general public relations campaigns that seek to burnish their reputation as good faith actors.[146] For example, a report from InfluenceMap found that, in the three years following the adoption of the Paris Agreement, the five largest publicly traded fossil fuel companies – ExxonMobil, Shell, Chevron, BP and Total – invested more than USD 1 billion in lobbying and branding.[147]

Fossil fuel companies have also tried to sabotage regulation directly, including by suing governments.[148]

E. INCENTIVES LOCKING IN FOSSIL FUEL DEPENDENCY



Despite the deepening climate crisis, state action to limit fossil fuels has been wholly inadequate. Meanwhile, governments continue to provide huge subsidies to fossil fuel companies,[149] incentivizing the continuation of the fossil fuel industry.

In 2022, governments globally spent an estimated USD 7 trillion (more than 7% of global GDP) on direct and indirect fossil fuel subsidies, according to the IMF.[150] Direct subsidies (undercharging for supply costs) amounted to USD 1.3 trillion in 2022, while indirect subsidies (undercharging for environmental costs, health harms and foregone consumption taxes) cost USD 5.74 trillion. Subsidies of all types result in government revenue losses, depriving the state of much-needed resources for human rights fulfilment (such as funding education and healthcare) and for investing in renewable energy. Indirect subsidies also mean that taxpayers, rather than polluters, are ultimately paying for the direct harms wrought by fossil fuels.

The UN Special Rapporteur on climate change has emphasized that: "Tax evasion and financial secrecy further help fossil fuel expansion, taking even more funding away from adaptation and responses to loss and damage. In 2024, at least $100 billion to $240 billion was lost in unpaid tax, equivalent to 4 to 10 per cent of the fossil fuel industry's global revenue."[151]

Private financial institutions such as banks, asset managers and insurance companies also play a key role in driving the climate crisis, especially by providing direct investment, financial and other services to fossil fuel companies and businesses linked to deforestation.[152]

Yet, fossil fuel dependency presents macro-economic risks, particularly for lower income countries. One of these risks is known as the "debt-fossil fuel production trap" whereby lower income economies have to rely on fossil fuel revenues to repay unsustainable amounts of debt. This is compounded by the fact that anticipated revenues from fossil fuels are often overinflated and require huge investments to reach expected returns, leading to even further debt, eroding long-term development prospects and causing devastating environmental and human harms.[153]

F. THE IMPERATIVE TO DEFOSSILIZE

Despite the multitude of harms associated with fossil fuel extraction, processing, transportation and use, production is currently set to increase.[154] Fossil fuels still account for 80% of the global primary energy supply, and "governments are planning on producing around 110% more fossil fuels in 2030 than would be consistent with limiting warming to 1.5°C".[155]

As a result, the Special Rapporteur on climate change has urged states and the international community at large to embark on "defossilization," a process defined as "an integrated approach to climate action at the nexus with nature, water and food that provides the single most impactful contribution to the protection of human health".[156]

A HUMAN RIGHTS-BASED JUST TRANSITION

The term "just transition" has its roots in the US labour struggles of the 1980s and 1990s, when the labour movement sought to ensure that workers had continued access to decent jobs and a decent standard of living in the context of economic transitions. Defossilization will represent one such transition. In 2015, the International Labour Organisation defined the just transition as a bridge from where we are today to an environmentally sustainable future where all jobs are green and decent, poverty is eradicated and social inclusion prevails.[157]

The concept of a just transition is increasingly invoked by the climate justice community as the urgency of the fossil fuel phase out grows. The Climate Action Network, which comprises more than 1,900 civil society organizations (CSOs) – including Amnesty International – in more than 130 countries, explains that a just transition requires meaningful participation from and support to workers and the communities in which they live.

Just transition policies should be comprehensive by addressing both the fossil fuel sector as well as the renewable energy sector and other sectors that are expected to grow, so that we build a human rights-respecting economy where all can thrive.[158]



The collective challenge of needing to defossilize has become more urgent in the context of rising authoritarian practices across various regions. For example, the current US administration seemingly perceives its economic interests as being closely tied to the fossil fuel industry and has consequently been requiring the purchase of US-produced fossil fuels as a condition of favourable trade deals.[159] This foreign trade policy is supported by domestic political and cultural shifts that consolidate authoritarianism, including: attacks on science; governmental efforts to spread disinformation; restrictions on climate protests and other types of expression, association and peaceful assembly; characterizing concern for the environment as weak and feminine; and linking the use of fossil fuels to a mythic, prosperous past.[160] While exemplified and accelerated by the current US administration, these trends are not confined to the USA, with some other countries and global energy governance actors – including Canada – recommitting to fossil fuel and other natural resource extraction.[161]

9
GLOBAL MAPPING



This report illustrates how fossil fuel extraction, production, transformation and transportation are driving climate chaos, harming people and nature. The global mapping outlined below documents the known extent of populations and ecosystems exposed to similar risks as those described in the case studies in this report.

Amnesty International worked with data scientists at Better Planet Laboratory (BPL) to identify and analyse existing data to start answering three essential questions:



How many operating and planned fossil fuel infrastructure sites can be mapped using available datasets?



How many people are estimated to live near existing and planned fossil fuel infrastructure?



To what extent does known fossil fuel infrastructure overlap with critical ecosystems?

Such analysis is new. This study establishes the first global estimates of the size of fenceline communities living in close proximity to fossil fuel infrastructure.

The following section synthesizes the quantitative data resulting from BPL's research in the context of the issues explored in this report. BPL is publishing all the data used in this mapping exercise in a publicly available open-source repository, alongside a paper exploring the data.[162]

Given data limitations – which are explained below – any mapping effort will likely underestimate the true footprint of fossil fuel infrastructure and ecosystems thus under-representing the potential for harm. Additionally, further research and resources are needed to accurately assess the planned expansion of the fossil fuel industry. Amnesty International and BPL hope that interdisciplinary collaboration between data scientists and human rights practitioners continues, and that the open-source elements of this project can be used in the work of environmental human rights defenders.

Prevailing approaches to analysing spatial data entail drawing borders across nature, thus leaving many attributes of ecosystems unrepresented, reflecting an implicit non-Indigenous bias. They are also based on short-term observational methods rather than cumulative knowledge gained through generations of lived experience. In the words of Gwii Lok'im Gibuu, member of the Wet'suwet'en and Gitxsan Nations and Co-Executive Director of the Skeena Watershed Conservation Coalition:[163] "Regarding data science, it shouldn't be up to the viewer to interpret that, at least not up to Western science [for which there is a] big difference with Indigenous science. Science in the Western World is to study an object over an amount of time. Western science [has] had 150 years to study anything,[164] when Indigenous People [who] have lived here for 30,000 years will have a different approach to time and science… Indigenous science is very much teachable, but it is based on experience. You have to live it."[165]

Moreover, the act of mapping and basing conclusions around measurements of distance replicates a colonial approach to land management that prioritizes human settlements over nature and the existence of non-human species. Environmental regulations are also often based on how close places of residence are to a particular location, but this approach does not capture the many functions a location plays in the ecosystem or in traditional land use and culture. For example, migratory species need uninterrupted, open space across which to travel. Hunting and trapping require that people do not live near wildlife habitat, as this would disturb the animals. Yet land that is uninhabited by people would appear to be unimportant in analyses that are based on the proximity of a resident population.

A. MAPPING FOSSIL FUEL INFRASTRUCTURE

How many operating and planned fossil fuel infrastructure sites can be mapped using available datasets?

1. Existing data landscape

Global Energy Monitor (GEM) is a CSO that collects and synthesizes publicly available data about energy infrastructure, including from government websites and the media. It holds one of the most comprehensive English language repositories tracking projects in the fossil fuel industry. BPL combined multiple datasets from GEM to produce an overview of the industry's footprint. In defining fossil fuel infrastructure elements, BPL included coal mines, coal plants, coal terminals, oil and gas extraction sites, oil and gas plants, LNG terminals, pipelines for oil and gas, and offshore infrastructure projects that fall within a nation's Exclusive Economic Zone (an area of ocean that stretches for 200 nautical miles off a country's coast).

Mapping using GEM data likely misses places that have less interest in and/or resources to document infrastructure or where deliberate efforts are made to conceal plans for new infrastructure. Transport infrastructure (other than pipelines and terminals) as well as minor wells were not included as they are not well-captured in GEM data. Other information may be missed in GEM data because of language limitations or discrepancies in how fossil fuel projects are documented in different countries. This means that BPL's findings using GEM data likely underestimate the true global scale of fossil fuel infrastructure globally.

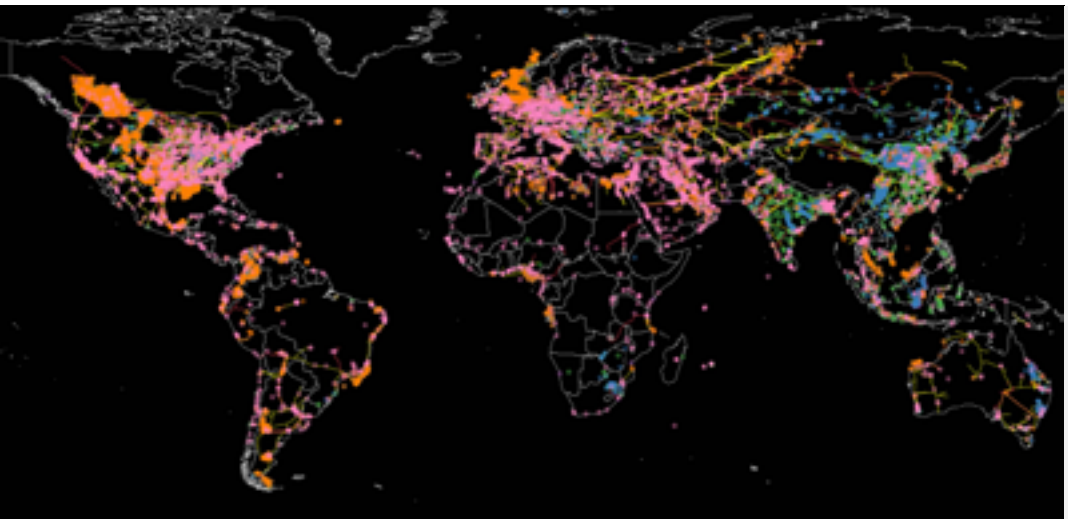
GEM data includes information about the locations of fossil fuel infrastructure as coordinates, or points and lines on a map. In the sections below, BPL used this location data to generate buffers associated with emissions and environmental and health risks.



Fossil fuel infrastructure takes many forms. The images above show examples of some of the types of infrastructure detailed in the GEM data and documented through case studies in Ecuador (top), Canada (center) and Colombia (bottom). © Amnesty International (photographers: Iván Martínez, Alli McCracken and Candy Ofime)

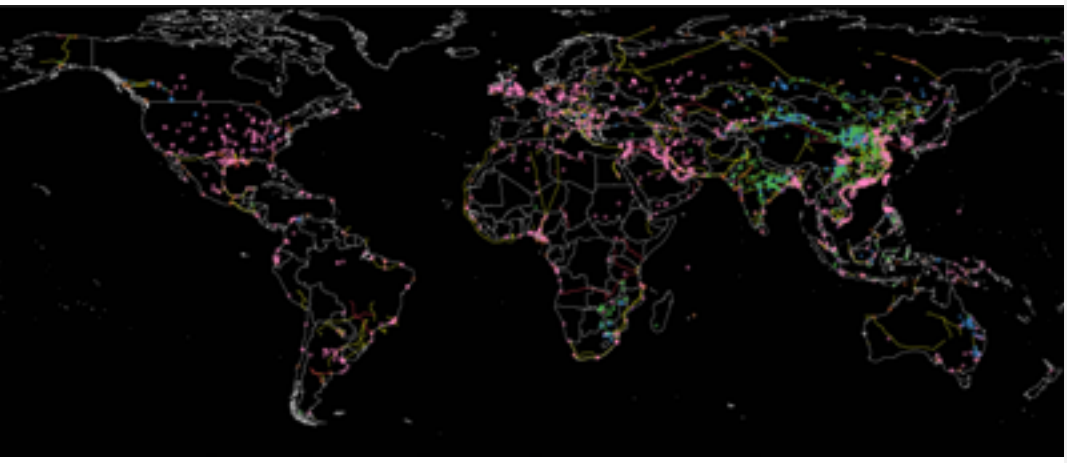
2. Initial findings

BPL was able to map 18,273 distinct fossil fuel infrastructure sites[166] globally that were in operation as of June 2025.[167] These known sites are distributed across 170 countries. The map below documents the vast amount of land dedicated to the extraction, production, transformation and transportation of fossil fuels based on available records. Notably, the map shows a high concentration of infrastructure in higher income countries, though coal mines and plants are concentrated in lower income countries.



Map showing the locations of more than 18,000 known operational fossil fuel sites, colour-coded by infrastructure type © Better Planet Laboratory

Despite the urgent need to curb fossil fuel production, the fossil fuel industry continues to expand. BPL identified at least an additional 3,507 known sites that are either proposed, in development or under construction in 140 countries, as shown in the map below. Of these planned sites, the most common types of infrastructure were oil and gas plants (1,124), gas pipelines (801), and coal mines (620). Notably, the number of oil and gas projects is set to increase across all continents while the number of coal plants and mines is increasing mostly in China and India.



Map showing an additional 3,507 known sites that are either planned, in development or under construction, colour-coded by infrastructure type. © Better Planet Laboratory

B. ESTIMATING THE SIZE OF POPULATIONS LIVING NEAR FOSSIL FUEL INFRASTRUCTURE

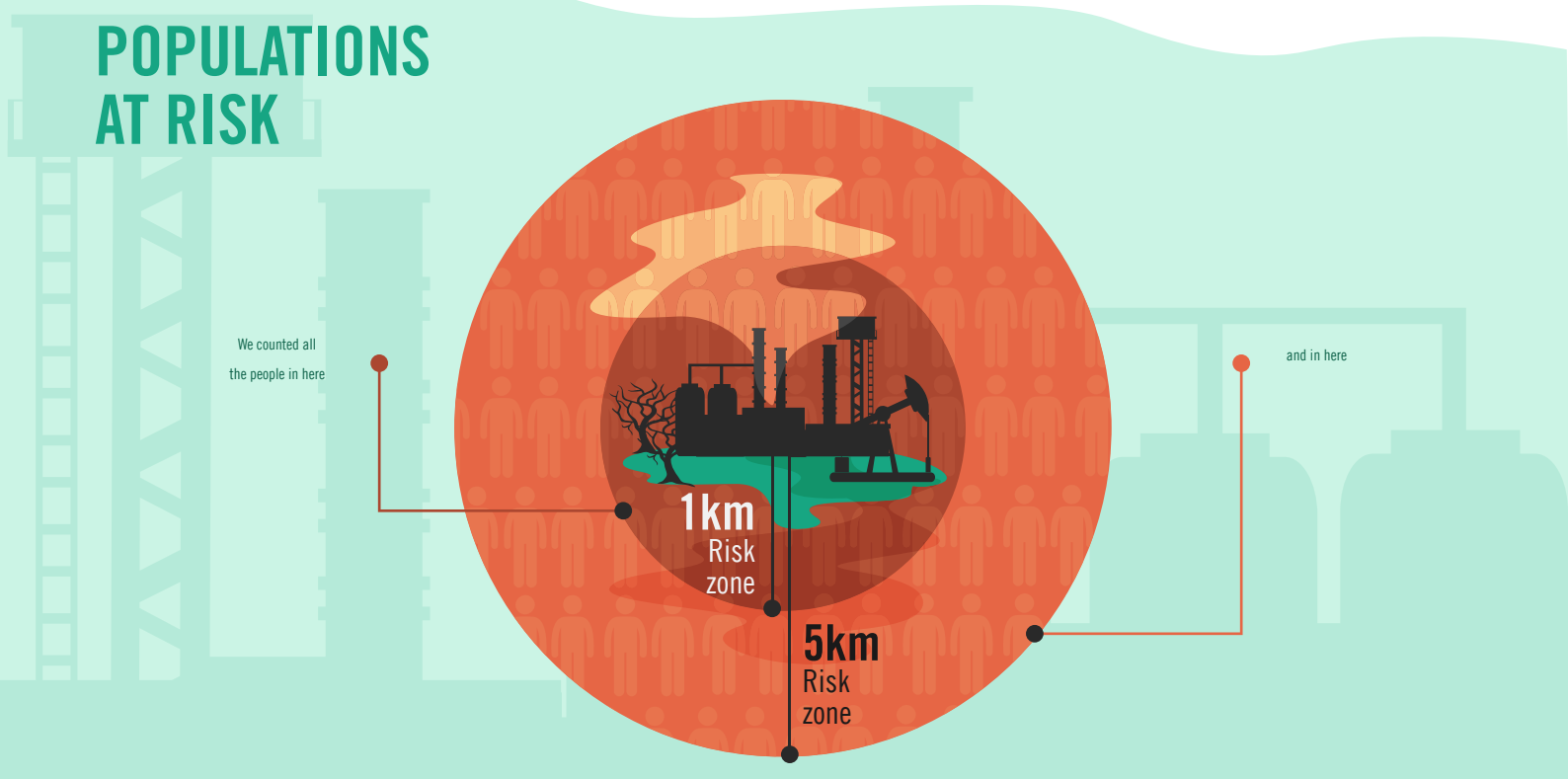
How many people are estimated to live near existing and planned fossil fuel infrastructure?

1. Existing data landscape

Amnesty International defines "fenceline communities" as communities that live near polluting infrastructure, including infrastructure used for producing or transforming fossil fuels. Fenceline communities are directly exposed to the adverse effects of pollution and environmental degradation emanating from extractive projects and often live in so-called "sacrifice zones".

Until now, there has been no comprehensive global estimate of the number of people who live in close proximity to fossil fuel infrastructure. The size of fenceline communities has previously been studied only on a local or national level.[168] Accurately counting the total global population living near fossil fuel infrastructure is impossible, but estimating its size can provide the human rights, scientific and policy communities with a basis for advocacy and policymaking. This is relevant because proximity to fossil fuel infrastructure has been associated with elevated risks of cancer,[169] cardiovascular illness,[170] bronchitis,[171] asthma,[172] adverse reproductive outcomes (congenital abnormalities, low birth weight and pre-term birth),[173] and anxiety and depression[174] among other negative health outcomes.[175]

To map the areas where community risk of exposure to health-harming pollutants associated with known fossil fuel infrastructure is likely to be highest, BPL created two different-sized buffers (1km and 5km) around infrastructure point locations. BPL chose these distances based on a literature review of 36 studies that examine health impacts for people living within various distances of different types of fossil fuel infrastructure.[176] BPL found two general categories of risk – those at highest risk living within 1km and those with lower but non-negligible risk living within 5km. BPL also calculated estimates that exclude populations near pipelines because pipelines have a large footprint and reduced risks at 5km relative to other types of fossil fuel infrastructure. Potentially harmful effects from proximity to pipelines can be severe, but the exposure rates per kilometre of pipeline per year can vary based on whether oil or gas is being transported, the size and age of the pipeline, maintenance schedules, and frequency of spillage and leakage.



In addition, not all people living near fossil fuel infrastructure are affected in the same way. This is due to physiological differences among people, risk mitigation efforts undertaken by operators of fossil fuel infrastructure, differing capacity within different communities to adapt to pollution, the extent to which the pertinent government authorities enforce regulation, and various other factors. Ability to adapt – such as having the resources to install air filters or to obtain quality health care – may correlate with racialization, ethnicity, socio-economic status and other aspects of social and economic hierarchy.[177]

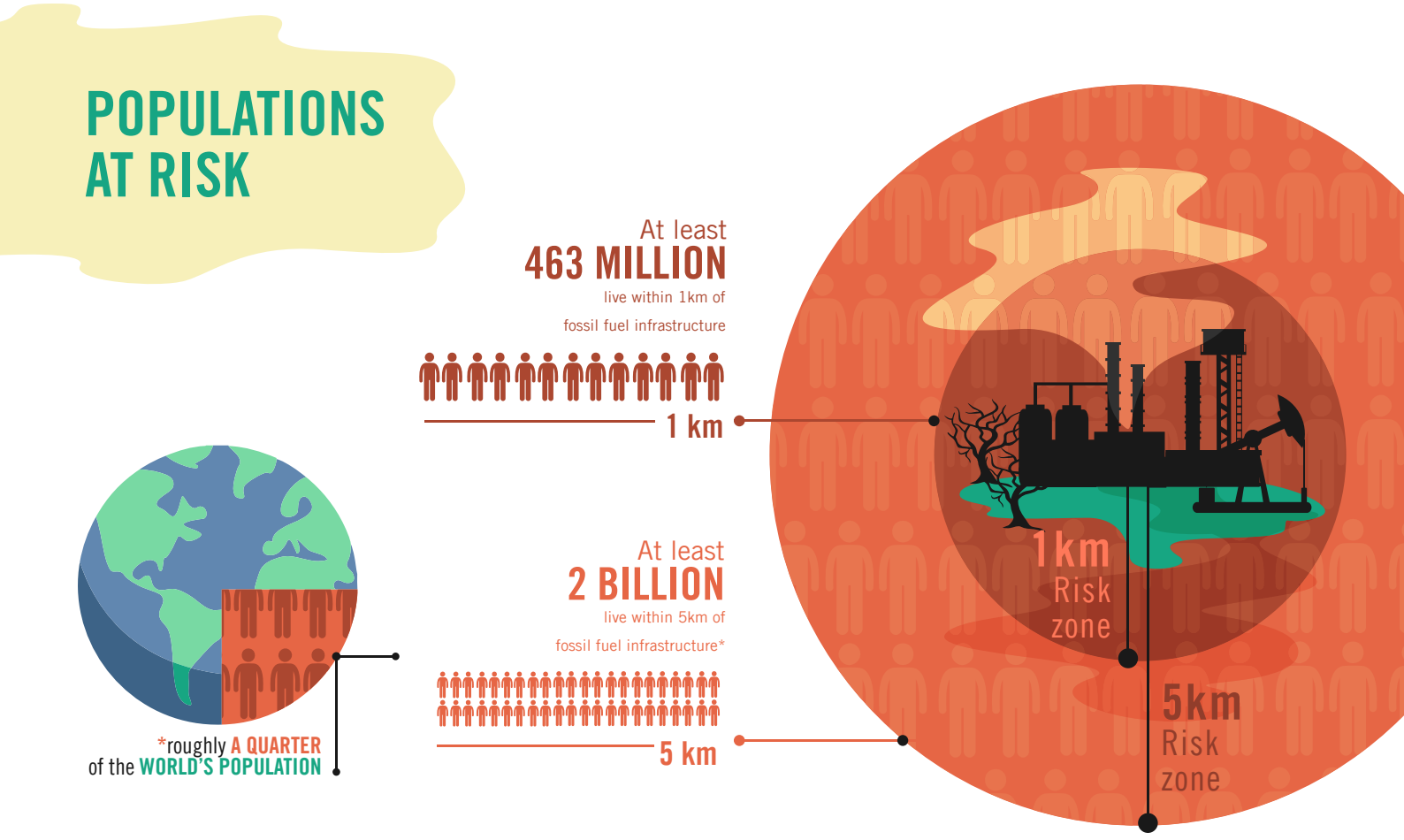
To estimate the number of people living near fossil fuel infrastructure sites, BPL overlaid infrastructure project footprints and buffers with WorldPop 2020 gridded population data, which gives residential population estimates at 1km spatial resolution globally.[178] The accuracy of the residential population data used varies by region and is likely to undercount the population in areas with limited census data and large rural populations. In addition, such data does not account for how people use and experience the land. For example, the Wet'suwet'en Nation – whose fight against the Coastal GasLink project is presented in below – are Indigenous land defenders protecting their territory. Traditionally, Wet'suwet'en people are semi-nomadic and, following their forcible removal from their land by Western settlers, many Wet'suwet'en people do not have permanent residences on the territory. In addition, the installation of fossil fuel facilities also changes the population of the fenceline community itself by attracting workers or displacing existing residents.

To start to understand how Indigenous people are impacted by fossil fuel infrastructure development, BPL assessed overlap between GEM data and data on Indigenous Peoples' land ownership.[179]

To estimate emissions, BPL used the GRACED dataset, a near-real-time global gridded daily emissions dataset which combines emissions reporting and science-based estimates from diverse sources.[180]

2. Initial findings

BPL estimates that at least 463 million people, including 124 million children, live within 1km of known fossil fuel infrastructure globally.



Pipelines alone account for most of this exposure, in part because of their large footprint. Based on the 2020 data from WorldPop, at least 321 million people are estimated to live within 1km of a pipeline, nearly equal to the population of the USA. When pipelines were excluded, BPL estimated that at least 43 million people live within 1km of all other types of fossil fuel sites.

BPL estimated that at least 2 billion people, roughly a quarter of the world's population, live within 5km of known fossil fuel infrastructure including pipelines. Of these roughly 2 billion people, more than 520 million are estimated to be children.



Youth activists in the Ecuadorian Amazon represent a fraction of the 520 million youth that are living within 5km of fossil fuel infrastructure, but they are fighting back. The case study below highlights their legal battle to protect their community and the Amazon. June 2024 © Amnesty International (photographer: Iván Martínez)

In addition, in terms of people being exposed to fossil fuel infrastructure, Indigenous Peoples bear disproportionate burdens. BPL found that, despite representing less than 5% of the global population, at least 16.1% of known global fossil fuel infrastructure is sited on Indigenous territories. It is important to note that land is not proportionately distributed, however; Indigenous Peoples manage or hold tenure rights to about a quarter of Earth's land surface.[181]

By overlaying the global gridded daily emissions (GRACED) dataset, BPL was able to establish that communities surrounding known fossil fuel infrastructure bear the burden of high localized emissions, even though the consumption of these energy sources (for transport, residential heating and so on) largely takes place elsewhere.

If realized, estimates indicated that at least an additional 135 million people will live within 1km of planned fossil fuel sites, including 30 million children. Further, roughly 339 million additional people, including more than 100 million children, will live within 5km of planned facilities.

The magnitude of people estimated to be living near known fossil fuel sites is staggering, but it is only one dimension of their possible impact. Sites not inhabited by people are equally important, as they are relevant for non-human species who are also harmed by exposure to fossil fuels.

C. OVERLAP WITH CRITICAL ECOSYSTEMS

To what extent does known fossil fuel infrastructure overlap with critical ecosystems?

1. Existing data landscape

Fossil fuels harm the human rights of fenceline communities and also pose an existential threat to nature. While all fossil fuel production is a barrier to reducing and reversing climate change, fossil fuel infrastructure also threatens to destroy nearby critical ecosystems.

In this report, Amnesty International defines "critical ecosystems" as natural environments that are rich in biodiversity, critical for carbon sequestration and/or where continued environmental degradation or disasters would trigger cascading ecosystem collapse. There is no single unifying dataset that identifies all critical ecosystems globally. Nonetheless, after assessment of several sources, BPL compiled three datasets that track different types of critical ecosystems:

A Key biodiversity areas – "sites of global importance to the planet's overall health and persistence of biodiversity".[182]

B Critical natural assets – ecosystems that are needed to support human well-being.[183]

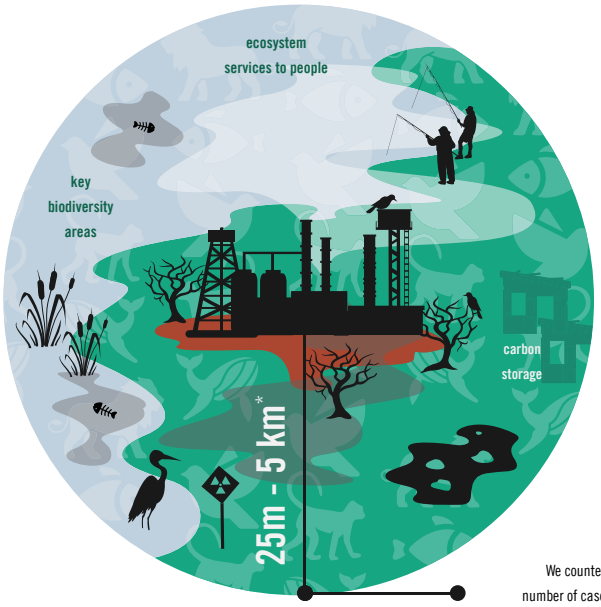
C Irrecoverable carbon – carbon reserves that are vulnerable to disturbancauthe and could not be recovered by 2050 if lost today.[184]

Being included in one of these datasets was taken as an indicator of ecological importance, meaning that if these ecosystems are damaged or destroyed there could be cascading impacts on planetary health. BPL overlaid these critical ecosystem datasets with the fossil fuel infrastructure data using a "spillover buffer" around each infrastructure site.



Colombia's wetlands are critical for balancing the global climate system through carbon sequestration, flood control and preservation of habitat for endangered species. The Magdalena Medio – which is profiled later in this report – holds 2,825 different categories of wetlands.185 © Amnesty International (photographer: Óscar Castaño)

This buffer captures common environmental impacts including noise pollution, air pollution (including particulate matter and debris), light pollution, water pollution, and disturbance from traffic and transport on land, in waterways and the sea, all of which can disrupt non-human species' health, interactions and movement, as well as human activities that depend on nature. The size of the spillover buffer was determined by the type of infrastructure, ranging from 25m to 5km. The spillover buffer was not designed to capture the full extent of potential damage from events such as pipeline breakages, explosions or natural disasters.

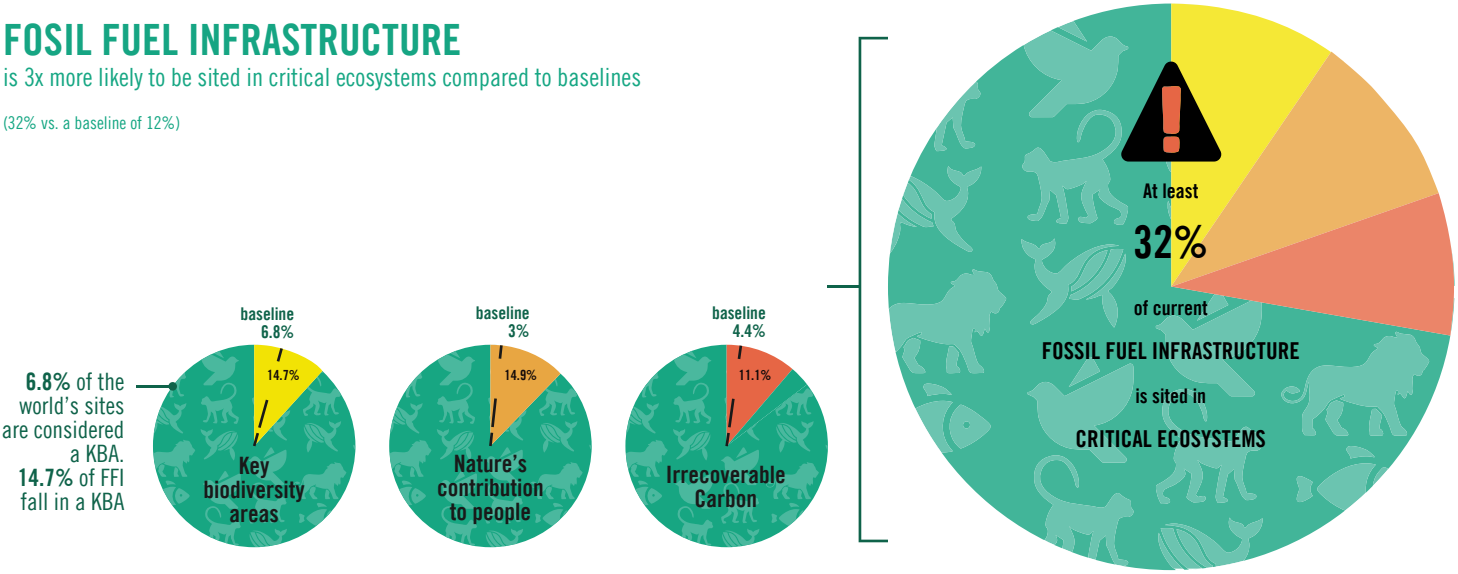


The datasets identifying different types of known critical ecosystems may not capture all of them across the globe. They may over-represent states and regions with increased interest in, and/or resources to map, biodiversity such as heavily monitored forests or wetlands in the higher income countries.

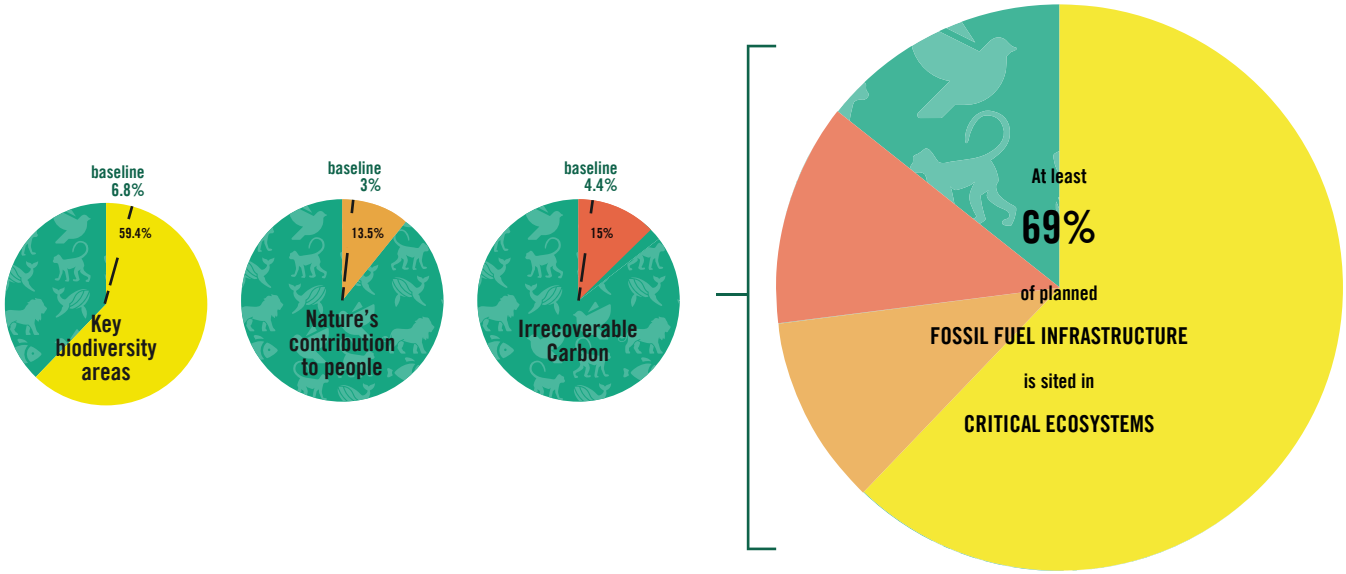
2. Initial findings

Known sites of existing and planned fossil fuel infrastructure mapped by BPL are disproportionally located in or near known critical ecosystems.

More specifically, BPL found that at least 32% of the 18,273 existing fossil fuel sites mapped overlapped with one or more of the critical ecosystem datasets detailed above. Some 11.9% of the world's surface area is included in at least one of these datasets, meaning that the rate of fossil fuel infrastructure based in critical ecosystems is more than triple the rate expected if it were to be proportionally distributed.



BPL also found that planned infrastructure is even more disproportionately located in known critical ecosystems, with at least 69% of planned sites in at least one of the critical ecosystems compared to the proportional level of 11.9%. This finding is consistent with reporting by the UN Special Rapporteur on climate change.[186]



Of the six locations where Amnesty International conducted in-depth qualitative research for this report (Brazil, Canada, Ecuador, Colombia, Senegal and Nigeria), all but one were identified by BPL's methodology as being sited in critical ecosystems. The proposed Sangomar oil and gas project located in the Saloum Delta in Senegal was not identified by any of the three datasets as overlapping with a critical ecosystem, even though it is considered one of Senegal's most important wetlands.[187] This is because the proposed Sangomar oil and gas project will be located off the coast, such that the wetlands of the delta were not captured by BPL's spillover buffer. Nevertheless, Amnesty International's qualitative research (see below) points to environmental risks associated with new oil and gas offshore extraction to residents of coastal towns, particularly artisanal fishers and natural ecosystems in this area.



Photo of a mangrove in the Saloum Delta (Senegal), January 2024 © Cem Ozdel/Anadolu via Getty Images

10
LEGAL FRAMEWORK



This chapter provides an overview of climate and international human rights law and principles most pertinent to analyse the rights infringements documented in the case studies featured in this report. Where applicable, it includes relevant (although non-exhaustive) references to regional human rights instruments that guided the findings presented.

A. STATES' DUTY TO PHASE OUT FOSSIL FUELS



The United Nations Framework Convention on Climate Change (UNFCCC)[188] entered into force in March 1994. Parties (currently numbering 198) have since held annual negotiations called Conferences of the Parties, or COP, to develop goals and methods to mitigate the climate crisis and adapt to its impacts.[189] The UNFCCC acknowledges that countries "whose economies are particularly dependent on fossil fuel production, use and exportation" may face "special difficulties" as a consequence of mitigation policies, such as fossil fuel phase out.[190]

At COP21 in 2015, parties to the UNFCCC adopted the Paris Agreement,[191] with the aim to "strengthen the global response to the threat of climate change"[192] by keeping the global average temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. Despite being the driving force behind global heating, fossil fuels are not explicitly mentioned in the Paris Agreement.[193]

Nevertheless, the imperative to protect human rights by phasing out fossil fuels has since been made explicit by several UN treaty bodies[194] and experts.[195] UN treaty bodies have called on individual states to reconsider fossil fuel projects in order to uphold their human rights obligations and their commitments under the Paris Agreement.[196]

In 2023 the Paris Agreement's first global stocktake (GST), mandated on a five-yearly cycle, marked a milestone in explicitly calling for a transition "away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science."[197] The first GST nevertheless lacks a clear follow-up mechanism, particularly in relation to a clear timeline for fossil fuel phase out.

While the GST is not legally binding, it is intended to "help policymakers and stakeholders strengthen their climate policies and commitments in their next round of NDCs [nationally determined contributions], paving the way for accelerated action."[198] Worryingly, subsequent forums in 2024 including COP29 saw a deliberate refusal by some parties to include any reference to fossil fuel phase out, or even a reiteration of the weak commitment made in the GST.[199]

Away from the COP process, 2025 saw a series of legal developments which paved the way for further recognition of states' duty to phase out fossil fuels. In May 2025 the UN Special Rapporteur on human rights and climate change clarified the human rights obligations of states and the responsibilities of businesses "to phase out fossil fuels and related subsidies within the current decade."[200] The same month, the Inter-American Court of Human Rights (IACtHR)[201] issued an Advisory Opinion on the climate emergency and human rights.[202] Both documents recognize fossil fuels as the main cause of climate change,[203] while the IACtHR asserts that "a particular group of industrial powers with economies highly dependent on fossil fuels" are responsible for the largest contribution to climate change, having "produced the highest cumulative historical emissions."[204]

The IACtHR calls on states parties to the Inter-American Convention on Human Rights "to progressively reduce GHG emissions from fossil fuel use," considering "activities and sectors that emit GHGs both within and outside the State's territory."[205] Specifically, "states are obliged to strictly monitor and control activities, both public and private, that generate GHG emissions, as foreseen in their mitigation strategy… it is the State's duty to monitor and control, at a minimum, the exploration, extraction, transport and processing of fossil fuels, cement manufacturing, agro-industrial activities, as well as other inputs used in such activities."[206]

The UN Special Rapporteur on climate change notes that states' duty and businesses' responsibility (see below) to phase out fossil fuels are underpinned by several human rights obligations and principles, including the rights to self-determination, development, life, freedom from discrimination, the right to a clean, healthy and sustainable environment as well as the principle of intergenerational equity.[207] Furthermore, she asserts that continued fossil fuel subsidies amount to a violation of the obligation under the International Covenant on Economic, Social and Cultural Rights (ICESCR) to ensure maximum available resources for the realization of human rights, "thereby diverting the maximum available public finance from combating climate change."[208]

A turning point in the recognition of fossil fuel phase out as a legal obligation came in the form of an Advisory Opinion from the International Court of Justice (ICJ) in July 2025. The ICJ established that:[209]



"Failure of a State to take appropriate action to protect the climate system from GHG emissions — including through fossil fuel production, fossil fuel consumption, the granting of fossil fuel exploration licences or the provision of fossil fuel subsidies — may constitute an internationally wrongful act which is attributable to that State."

COMMON BUT DIFFERENTIATED RESPONSIBILITIES AND RESPECTIVE CAPABILITIES

The notion of "common but differentiated responsibilities and respective capabilities" (CBDR-RC) is a principle within the UNFCCC, and in international environmental law more generally, that acknowledges the different capabilities and differing responsibilities of individual countries in addressing climate change. The principle of CBDR-RC is also explicitly referenced in the Paris Agreement.

In its 2025 Advisory Opinion on the obligations of states with respect to climate change, the ICJ held that the CBDR-RC principle "reflects the need to distribute equitably the burdens of the obligations in respect of climate change, taking into account, inter alia, States' historical and current contributions to cumulative GHG emissions, and their different current capabilities and national circumstances, including their economic and social development. The principle of common but differentiated responsibilities and respective capabilities thus acknowledges, on the one hand, the historical responsibility of certain States and, on the other, that the measures which can be expected from all States with respect to addressing climate change are not the same."[210]

The ICJ recognized CBDR-RC as "a core guiding principle for the implementation of the climate change treaties." While the ICJ held that the CBDR-RC principle itself "does not establish new obligations," it found that it is "relevant for the interpretation of treaties and the determination of rules of customary law relating to the environment."[211] Indeed, this principle determines the rate at which each state must implement its phase out obligation.



FOSSIL FUEL TREATY

Starting in 2015, a group of Pacific states led by Vanuatu and Tuvalu called on the international community to join them in developing a Fossil Fuel Treaty. This initiative, supported by Amnesty International, aims to "foster international cooperation to accelerate a transition to renewable energy for everyone, end the expansion of coal, oil and gas, and equitably phase out existing production in keeping with what science shows is needed to address the climate crisis."[212]

By mid-2025 the initiative had received the backing of 17 states – many of them small island developing nations – as well as the European Parliament, World Health Organization[213] and more than 135 cities and subnational governments.[214]

FOSSIL FUEL TREATY

B. RIGHT TO A HEALTHY ENVIRONMENT

Years of sustained international advocacy by CSOs,[215] Indigenous Peoples, fenceline and frontline communities and environmental human rights defenders led to the adoption of resolutions at the UN Human Rights Council in 2021,[216] and the UN General Assembly in 2022,[217] recognizing the human right to a clean, healthy and sustainable environment (hereinafter abbreviated as 'healthy environment'). In 2025 the ICJ recognized that the right to a healthy environment is "essential for the enjoyment of other human rights."[218]

The right to a healthy environment encompasses both procedural and substantive dimensions. The former requires states to:

(i) Ensure meaningful, informed, inclusive and equitable public participation in all climate and environmental decision-making, with a particular emphasis on empowering directly affected and marginalized groups;

(ii) Establish monitoring programmes, assessing major sources of exposure and provide the public with accurate, accessible information about risks to human rights, human health and ecosystem integrity;

(iii) Assess the potential environmental, social, health, cultural and human rights impacts of all projects and proposals that could foreseeably exacerbate the climate and environmental crisis;

(iv) Enable affordable and timely access to justice and effective remedies for all, in order to hold states and businesses accountable for complying with climate and environmental laws and fulfilling their human rights obligations and responsibilities.[219]

The IACtHR has emphasized that "the obligation to prevent environmental damage involves monitoring the effective implementation and compliance with environmental protection regulations, and ensuring active transparency and accountability of both the public and the private sector."[220]

The right to a healthy environment is multidimensional and encompasses clean air, a safe climate, safe and sufficient water, healthy and sustainably produced food, non-toxic environments and healthy ecosystems and biodiversity.[221] With regards to substantive obligations, states must not violate the right to a healthy environment through their own actions or through the actions of state-owned enterprises. States must also protect the right to a healthy environment from being violated by third parties, especially businesses, through the adoption of strong, non-discriminatory laws, regulations and standards (see more below).[222]

In 2025 the IACtHR formally recognized the human right to a healthy climate as an independent right, derived from the right to a healthy environment.[223] It held that the right to a healthy climate "protects the possibility of each individual being able to live in a climate system free of dangerous anthropogenic interference."[224] The IACtHR also emphasized that the right a healthy climate has both individual and collective dimensions, stressing that "in the collective sphere, this right protects the collective interest of present and future generations of human beings and other species in preserving a climate system that is suitable for ensuring their well-being and the equilibrium between them vis-à-vis the severe existential threats from the effects of the climate emergency."[225]

The IACtHR has recognized that the right to a healthy environment encompasses an autonomous dimension that "protects the components of the environment, such as forests, rivers, and seas, as legal rights in themselves, even in the absence of certainty or evidence of the risk to the individual."[226]

C. STATES' DUTY TO PROTECT NATURE



The UNFCCC and Paris Agreement both require states parties, in line with the principle of CBDR-RC, to protect and enhance carbon sinks and reservoirs "including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems."[227] The Paris Agreement further recognizes the "importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, recognized by some cultures as Mother Earth, and noting the importance for some of the concept of 'climate justice,' when taking action to address climate change."[228]

Entering into force in 2003, the Convention on Biological Diversity (CBD), set out commitments for maintaining the world's ecological underpinnings to ensure sustainable economic development. Now with 196 states parties, the CBD has three main goals:

(i) Conservation of biological diversity;

(ii) Sustainable use of its components; and

(iii) Fair and equitable sharing of the benefits from the use of genetic resources.[229]

Among other things, the CBD requires states to establish protected areas and promote the protection of ecosystems, natural habitats and viable populations of species in their natural surroundings (so-called 'in-situ conservation').[230] It also requires projects likely to affect biodiversity to go through mandatory environmental impact assessments.[231]

At the 15th Conference of the Parties to the CBD, states adopted the Kunming-Montreal Global Biodiversity Framework (KM-GBF).[232] While this framework sets ambitious targets to strengthen the protection and promotion of biodiversity globally by 2030,[233] it fell short of explicitly recognizing Indigenous Peoples' lands and territories as a separate category of conserved area.[234] Today, many questions remain around how to monitor and enforce the human rights safeguards contained in KM-GBF; for example, ensuring that the designation of new protected areas respect Indigenous Peoples' right to free, prior and informed consent.[235]

Over the years, annual COPs for both the UNFCCC and CBD have increasingly recognized the interdependence of protecting biodiversity and a healthy climate.[236]

Finally, the IACtHR has recognized nature as a distinct subject of rights. It has held that:[237]



"Recognition of Nature's right to conserve its essential ecological processes contributes to strengthening a truly sustainable development model that respects planetary limits and ensures the availability of crucial resources for present and future generations... This recognition allows us to transcend inherited legal concepts that conceived Nature exclusively as an object of ownership or an exploitable resource."

In this respect, the IACtHR has held that this duty not only requires states to "refrain from acting in a way that causes significant environmental damage, but that states also have the positive obligation to adopt measures to guarantee the protection, restoration and regeneration of ecosystems."[238] Furthermore, the IACtHR has specifically held that states' mitigation strategies should "include measures to protect biodiversity and ecosystems, particularly those that have a crucial function in regulating the climate system and the planet's natural cycles, including the oceans and the maritime and coastal environment, soils, forests, and mangroves."[239]



THE PRINCIPLE OF INTERGENERATIONAL EQUITY

The principle of intergenerational equity recognizes the rights of each generation to use and enjoy the natural resources of the planet, and the corresponding duty to conserve these resources for the future. Intergenerational equity is central to the articulation of climate justice demands. It has been recognized as a core legal principle by climate and biodiversity agreements,[240] various UN treaty bodies[241] and international courts.[242]

In its 2025 Advisory Opinion on the climate emergency and human rights, the IACtHR held that "pursuant to the principle of intergenerational equity, States are required to actively contribute through the creation of environmental policies aimed at ensuring that current generations leave behind a stable environment that will allow future generations similar opportunities for development. In this way, this principle is closely related to the principles of prevention, precaution and progressivity."[243] Furthermore, the IACtHR found that in the context of the climate emergency, "intergenerational equity is reinforced by the principles of intragenerational equity and common but differentiated responsibilities."[244]

In its 2025 Advisory Opinion on the obligations of states with regard to climate change, the ICJ held that "intergenerational equity is an expression of the idea that present generations are trustees of humanity tasked with preserving dignified living conditions and transmitting them to future generations."[245] The ICJ made clear that the principle of intergenerational equity should serve as a "guide for interpretation" of states' obligations to address climate change.

D. EQUALITY AND NON-DISCRIMINATION



The principles of equality and non-discrimination, affirming that all individuals are entitled to equal treatment and protection under the law, are foundational principles of international human rights law. They are enshrined in all core international human rights treaties.[246]

The preamble of the Paris Agreement stresses that, when taking action to address climate change, states should especially consider the rights of "Indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality."[247]

In its 2025 Advisory Opinion the IACtHR held that "the fundamental principle of equality and non-discrimination has entered the realm of jus cogens [a so-called 'peremptory norm' from which no derogation is permitted, obligating all states regardless of whether or not they have signed/ratified the relevant treaties]" and encompasses both the prohibition of arbitrary differences in treatment, and the obligation of states to adopt positive measures to reverse or modify any discriminatory situations in their societies that affect a specific group of individuals.[248]

Stressing that the prohibition of racial discrimination is a peremptory norm of international law, the UN Special Rapporteur on climate change has also noted that states' duty to phase out fossil fuels should be "interpreted as a component of States' obligation to prevent discrimination, including by discontinuing patterns of racial discrimination and prioritizing reparations for historical climate harm."[249]

E. RIGHT OF ACCESS TO INFORMATION AND PUBLIC PARTICIPATION

Article 19 of the International Covenant on Civil and Political Rights (ICCPR) recognizes the right to freedom of opinion and expression, which includes the right to "seek, receive, and impart information." The UN Human Rights Committee has further provided that "[t]o give effect to the right of access to information, States parties should proactively put in the public domain Government information of public interest. States parties should make every effort to ensure easy, prompt, effective and practical access to such information."[250] Therefore, if a project will alter the enjoyment of human rights, states must disclose all relevant information relating to it, and its assessment of all rights and interests of all parties that are likely to be affected by the proposal. States should also provide information on monitoring, evaluation (including of health, environmental and social-economic impacts) and accountability processes including how to obtain redress for a violation of human rights.[251]

Article 9 of the African Charter on Human and Peoples' Rights provides that "every individual shall have the right to receive information." In 2019 the African Commission of Human and People's Rights adopted the Declaration of Principles on Freedom of Expression and Access to Information in Africa that recognizes the right of access to information.

For Latin America and the Caribbean, the Escazú Agreement[252] entered into force in 2021. Similar to the Aarhus Convention in the European regional human rights system, it focuses on the three pillars of environmental democracy: access to information, public participation and access to justice.

Article 25 of the ICCPR also recognizes the right to "participate in public affairs," which encompasses the duty to consult individuals and groups that may be affected by large-scale extractive projects. For a process of consultation to constitute effective participation in decision-making, a dialogue between rights holders and the state, in good faith and eliminating as far as possible all power imbalances, needs to be established at the early stages of any project.[253] This is in addition to the specific right of Indigenous Peoples to free, prior and informed consent for projects affecting their lands and territories (see below).

The Durban Declaration and Programme of Action, the UN's plan to combat racism, racial discrimination, xenophobia and related intolerance globally, invites governments to improve access to public information on issues of health and the environment and ensure equal participation in decision-making to counteract environmental racism.[254]

F. RIGHTS OF INDIGENOUS PEOPLES

Article 3 of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) establishes that Indigenous Peoples have the right to self-determination, which encompasses the rights to freely determine their political status and freely pursue their economic, social and cultural development.[255]

Article 32.2 of UNDRIP establishes that "States shall consult and cooperate in good faith with the Indigenous Peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources."[256]

The duty to consult must be operationalized through prior consultations, conducted in good faith, with the objective of obtaining free, prior and informed consent (FPIC). At any point in the process the affected Indigenous People may reject the proposal. The extent to which the state is obligated to respect that decision depends on the degree of human rights harm that will result; the greater the harm, the more the expectation to respect the Indigenous People's decision hardens into an absolute obligation.[257] While a state may delegate the consultation process to a non-state actor, such as a corporation, the state is ultimately responsible for ensuring that adequate consultation takes place.[258] Only by following these principles can free, prior and informed consent be obtained.[259]

Article 25 of UNDRIP recognizes Indigenous Peoples' spiritual relationship with the land and waters that they have traditionally possessed and the responsibilities that they bear to future generations.[260] The IACtHR has ruled that the concepts of land and territory are a necessary source for the continuation of their life and cultural identity.[261] Territory goes well beyond specific villages or settlements and includes lands that are used for hunting, fishing, gathering, transport, culture and other purposes.[262]

In its 2025 Advisory Opinion, the IACtHR also emphasized that Indigenous Peoples' "relationship with the land is not merely a matter of possession and production, but rather a substantive and spiritual element which they should enjoy fully, including to preserve their cultural legacy and transmit this to future generations." The IACtHR stressed the importance of "the transmission of collective cultural heritage, and this encompasses both the land and the resources traditionally used by Indigenous Peoples and that are necessary for their physical and cultural survival and for the development and continuity of their world view."[263]

G. RIGHT TO HEALTH

Article 12 of the ICESCR recognizes that everyone has the right to the enjoyment of the highest attainable standard of physical and mental health. States that have ratified the ICESCR have also assumed responsibility to ensure availability and access to the underlying determinants of health – the conditions needed for people to enjoy good health such as food, safe water, housing, healthy working conditions and a healthy environment, among others.[264]

The UN Special Rapporteur on the right to health has recognized the disproportionate effect of climate change on marginalized groups, the impact that severe environmental changes have on the underlying determinants of health, and the effects of climate change on mental health, particularly for children and young people.[265]

Article 24 of UNDRIP establishes that Indigenous Peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals.[266]

H. PROTECTION OF ENVIRONMENTAL HUMAN RIGHTS DEFENDERS

A human rights defender is any person who, by themselves or with others, peacefully acts to defend and/or promote human rights at the local, national, regional or international level.

The UN Declaration on Human Rights Defenders recognizes and protects the right to defend human rights as an autonomous and independent right and sets out how states' international human rights obligations must apply to guarantee a safe and enabling environment in which human rights defenders can work safely and without fear of reprisals. The recognition of this right means that individuals who might describe themselves as environmental or climate activists, or as air, land and water defenders (including Indigenous people and members of traditional communities) also fall under the protections afforded to human rights defenders.[267]

Article 9 of the Escazú Agreement obliges states parties to respect, protect and fulfil the rights of environmental human rights defenders "so that they are able to act free from threat, restriction and insecurity".

The IACtHR, interpreting instruments including the Escazú Agreement, has recognized that states have a "special duty of protection" towards environmental human rights defenders in the context of the climate emergency.[268]

I. RIGHT TO EFFECTIVE REMEDY

The human right to effective remedy encompasses the right to equal and effective access to justice; adequate, effective and prompt reparation for harm suffered, and access to relevant information concerning violations and reparation mechanisms. The IACtHR has expressly stressed that "States have the obligation to guarantee that indigenous and tribal peoples, and also Afro-descendant communities, peasant farmers, and fishermen have effective access to justice in the context of the climate emergency."[269]

Furthermore, in its 2025 Advisory Opinion, the ICJ outlined the legal consequences that may arise from the commission of an internationally wrongful act of breaching obligations to protect the climate system from anthropogenic GHG emissions, including through fossil fuel production, fossil fuel consumption, the granting of fossil fuel exploration licences or the provision of fossil fuel subsidies. The ICJ made clear that these include "obligations of cessation and non-repetition, which are consequences that apply irrespective of the existence of harm, as well as the consequences requiring full reparation, including restitution, compensation and/or satisfaction."[270]

J. CORPORATE RESPONSIBILITY

Under international law, states have the obligation to respect, protect and fulfil human rights. The UN Guiding Principles on Business and Human Rights (UN Guiding Principles) reiterate that such duty applies in the context of corporate activities.[271] The UN Guiding Principles also establish that companies in all sectors have their own responsibility to "do no harm" and respect all human rights wherever they operate and throughout their operations. This widely recognized standard of conduct is independent of a state's own human rights obligations and exists over and above compliance with national laws and regulations protecting human rights.[272]

The UN Guiding Principles establish that states must take "appropriate steps to prevent, investigate, punish and redress" corporate harm within their jurisdiction.[273] They also provide that "where business enterprises identify that they have caused or contributed to adverse impacts, they should provide for or cooperate in their remediation."[274] Companies are required to seek to prevent or mitigate adverse human rights impacts directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts.[275]

To meet its corporate responsibility to respect human rights, a company should take proactive and ongoing steps to identify and respond to its potential or actual human rights impacts. Importantly, businesses should implement a due diligence process to identify, prevent, mitigate and account for how they address negative human rights impacts that the enterprise may cause or contribute to through its own activities, or which may be directly linked to its operations, products or services by its business relationships.[276]

In June 2023, the UN Working Group on Business and Human Rights adopted an information note (hereinafter referred to as 'Guidance') clarifying what actions states and businesses should take to embed human rights considerations into climate change policies, processes and actions.[277] The Guidance stresses that in line with international human rights, environmental and climate law, states should take action on climate change-related harms to human rights and the environment on the basis of justice and equity, in accordance with their CBDR-RC.[278] It makes clear that companies' responsibility to respect human rights includes "the responsibility to act in regard to actual and potential impacts related to climate change".[279] The Guidance urges companies to "[p]hase out both the use of fossil fuels and the production of greenhouse gas emissions, avoid contributing to deforestation, and not use carbon offsets", as well as ensuring that "their value chains and practices are in line with the goal of achieving a just transition to a zero-carbon economy."[280]

THE "POLLUTER PAYS" PRINCIPLE

The "polluter pays" principle refers to the approach that polluters should bear the cost of preventing, managing and remediating the health and environmental impacts associated with their polluting activities or operations.[281]

This approach is reflected in Principle 16 of the Rio Declaration, which states that:

"National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment."

The polluter pays principle has been a rallying demand of the climate justice movement, as a means towards the provision of effective remedies to fenceline and frontline communities, including through adequate finance to realize rights and ecosystem restoration.



11
CASE STUDIES

A. KEY FINDINGS

The case studies that follow illustrate the various adverse human rights impacts of fossil fuel extraction, processing and transportation on individuals and groups living in the vicinity of such projects and on critical ecosystems endangered by the environmental degradation these projects cause. Amnesty International's research, spanning multiple countries across the Americas and West Africa, reveals a range of impacts across the full lifecycle of fossil fuels, including but not limited to:

(i) Existential threats to Indigenous Peoples and traditional communities;

(ii) The creation of pollution hotspots (sacrifice zones) endangering both people and critical ecosystems;

(iii) Disparate impacts on minoritized groups; and (iv) safety and security risks that are particularly acute for environmental human rights defenders.

These are enabled in part by the significant power wielded by the corporations involved.

1. Erosion of territorial integrity and threats to economic and cultural survival

All the individuals and groups interviewed by Amnesty International for this research reported that infrastructure to either extract or transport fossil fuels severely erodes the territorial integrity of the land and waters on which they live and rely. Indigenous Peoples and traditional communities in particular described the development of such infrastructure as an existential threat, in part because of their unique relationship with the natural systems being destroyed. These accounts are consistent with the following assessment by the UN Special Rapporteur on climate change:[282]

> **"The cultural survival of… Indigenous Peoples, people of African descent, peasants and small-scale fishers is impaired by loss of territories, protracted unsafe climatic conditions and/or severe ecosystem degradation."**

Some of the affected groups interviewed described extraction as a form of economic or cultural pillage, perpetrated by corporate actors through intimidation and coercion, often with a lack of adequate governance and monitoring from government authorities. Many associated the operation of nearby fossil fuel infrastructure with the destruction of their means of subsistence.

2. Sacrifice zones

Most of the projects investigated by Amnesty International created pollution hotspots, turning host communities and critical ecosystems into sacrifice zones. Processing, site development and transportation of fossil fuels caused, or risk causing, harm to people and wildlife, led to severe pollution, medium- to long-term environmental degradation, and damaged key biodiversity areas or carbon sinks.

All affected groups condemned the lack of information received about the health and environmental impacts of fossil fuel activities affecting their communities. Various state actors and environmental regulators interviewed for this research also reported having insufficient means to monitor polluting activities of the fossil fuel industry, and, in turn, a limited ability to respond to fenceline communities' calls for more transparency.

Often, individual members of affected groups voluntarily lead grassroots environmental monitoring initiatives, compensating for gaps in state action, and circumventing operators' failure to meaningfully engage with groups' demands for accessible information.

Most affected groups condemned the power imbalance between their communities and corporate operators, as well as the lack of effective remedy for the individual and collective harms to health and the environment caused by fossil fuel activities.



3. Disparate impacts

Affected groups and environmental human rights defenders interviewed by Amnesty International identified the health and environmental risks their communities face, as well as the lack of responses from the authorities to their human rights concerns, as the result of environmental racism. Indigenous land defenders interviewed in Canada also saw their land defence as a continuation of their struggle against settler colonialism, and a fight for self-determination and respect for their systems of self-governance against state-supported corporate greed.

These accounts were supported by Better Planet Laboratory's data analysis, which found that "these harms are not incidental but structural: fossil fuel facilities are disproportionately located in protected areas, near critical natural assets, and in regions with weak regulatory frameworks, often overlapping with Indigenous lands and communities with limited political power. This creates patterns of environmental racism and inequity, where those least responsible for global emissions bear the greatest burden of disease, displacement, and ecological destruction."[283]



4. Threats to environmental human rights defenders

Several of the environmental human rights defenders interviewed situated their campaigns and mobilization to protect their air, land and water as serving a broader public cause to defend natural ecosystems and the sustainability of life on Earth, for the benefit of humanity as whole, and in order to pass an ecological inheritance to future generations. All environmental human rights defenders interviewed faced severe safety and security risks in connection with their campaigning activities. Many experienced intimidation and threats, both in person and online, as well as criminalization, and shared stories of resistance and resilience even in contexts of shrinking civic space.



5. Profit over people

Fenceline communities condemned the lack of direct and meaningful consultation and transparency from corporate actors threatening their air, land and water. Many reported not fully understanding the scope of operators' ongoing or expansion activities and reported never consenting to projects affecting their territory. Some local government actors expressed similar concerns. Several affected groups, academics and civil society representatives interviewed also pointed to the acquiescence of authorities, who often depend on the revenues of the industry or are preyed on by fossil fuel lobbyists who exercise undue influence in policy making and legislative forums.

Many of the environmental human rights defenders condemned extractivist paradigms evidenced in fossil fuel company behaviour, commodifying nature and consistently putting profit over people.

B. AMERICAS

1. Brazil: Urban artisanal fishers resist sprawling fossil fuel infrastructure in Guanabara Bay

A) CLIMATE CHANGE DENIALISM

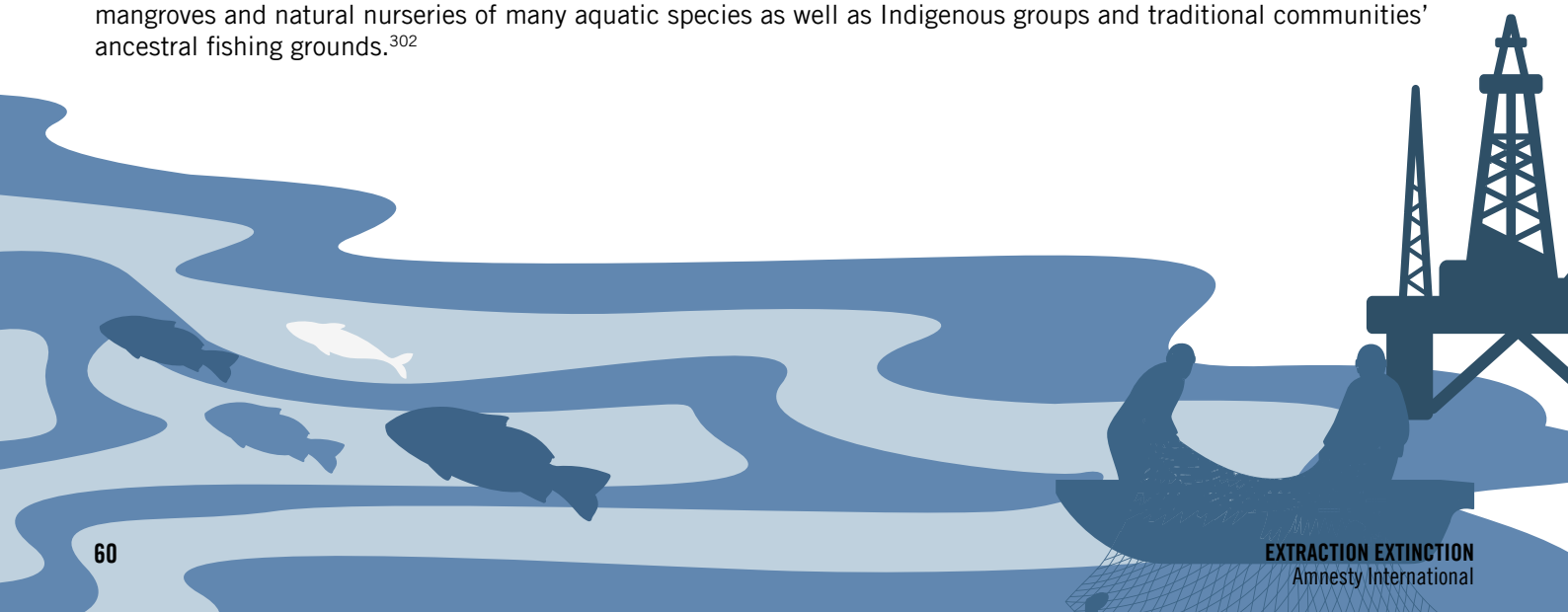
(1) Brazil's fossil fuel economy

Brazil is the world's seventh largest oil exporter, and its exports are rising.[284] In total, 97.6% of its petroleum and 85.3% of natural gas are extracted in offshore fields.[285] Most of this extraction takes place in "pre-salt" reserves; areas located far beneath the ancient seabed which require deep drilling with serious environmental consequences. Most of Brazil's pre-salt extraction takes place in the Santos Basin,[286] located off the coast of Rio de Janeiro and Sao Paulo, which contains the largest deepwater field in the world.[287] In August 2025, BP announced that it had made its "largest global oil and gas discovery in 25 years" in the Bumerangue Block in the Santos Basin.[288]

Although Brazil has invested heavily in alternative forms of energy for its own domestic electricity needs,[289] the country has increased fossil fuel extraction for export. Oil and gas are estimated to account for 17% of the country's GDP.[290]

The Brazilian Ministry of Mining and Energy plans to increase fossil fuel production until 2032,[291] and the Brazilian majority state-owned oil and gas company Petrobras has indicated its intention to continue extracting until 2050.[292] Brazil continues to actively license new oil exploration and production, including in the Santos, Pelotas, Paraná and Amazon Basins.[293] Between April 2024 and April 2025, the Brazilian government authorized 181 new licences for oil and gas, with an additional 332 'blocks' (areas set aside for exploration) expected to go to auction before the end of 2025.[294] In response to the findings presented in this report, Brazil's National Agency for Petroleum, Natural Gas and Biofuels (ANP) told Amnesty International that the International Energy Agency's net zero by 2050 scenario projects that "oil and natural gas will still play a residual role in 2050, with an emphasis on reducing carbon intensity and adopting mitigation technologies such as carbon capture and storage" and that ANP's role was to "ensure that the remaining production of fossil fuels occurs with the least possible environmental impact, supporting a fair and sustainable transition of the sector".[295]

Recently, controversy has emerged over the exploration of offshore oil reserves at the mouth of the Amazon River, in a region known as the Equatorial Margin.[296] The Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) denied Petrobras' requests to undertake exploratory drilling in the area in May 2023 and February 2025.[297]IBAMA raised concerns about the impact of potential oil spills from exploration activities on marine ecosystems including "mangroves and mesophotic reefs".[298] However, after significant political pushback, including from President Luiz Inácio Lula da Silva,[299] IBAMA Director Rodrigo Agostinho reversed IBAMA's position and authorized Petrobras to carry out drilling tests.[300] While state prosecutors challenged the permit, in July 2025 a federal judge allowed Petrobras' exploration project to continue.[301] Environmental human rights defenders and Indigenous Peoples warn that an oil spill in this region would not only cause local damage but would have devastating effects over vast areas due to strong, rapid ocean currents capable of dispersing contaminants hundreds of kilometres, reaching other coastal regions and neighbouring countries. The impacts would damage the marine ecosystem, affecting mangroves and natural nurseries of many aquatic species as well as Indigenous groups and traditional communities' ancestral fishing grounds.[302]





Map of exploration at the mouth of the Amazon River, planned by Petrobrás © Divulgação/Petrobras

On 20 October 2025, in a highly controversial move, IBAMA formally authorized Petrobras to start exploratory drilling in so-called "Block FZA-M-59".[303] Less than two weeks before the beginning of the global climate summit COP30 held in Belém, IBAMA's decision sparked outrage among Brazilian civil society – some challenged this decision before domestic courts – pointing out that Brazil's continued expansion of oil and gas fields in some of the country's most critical ecosystems stands in sharp contrast with the government's climate leadership on the international stage.[304] In response to findings presented in this report, IBAMA told Amnesty International that "IBAMA is not responsible for defining the country's energy matrix, which areas will or will not be offered for oil and gas exploration, which will be subject to a moratorium". Despite many Brazilian climate and environmental justice's organizations suggestion to the contrary, IBAMA stressed that the agency observes guidelines that "seek public participation in its environmental licensing processes" including through "public hearings [or] social media communication plans" and strives to include traditional communities in its consultation its conducts in the context of environmental licensing.[305]

(2) Petrobras

As of November 2024, Petrobras "accounted for 98% of Brazil's oil production, including wells operated in consortium" with companies including Shell, TotalEnergies and China National Offshore Oil Corporation.[306] Petrobras discovered Brazil's pre-salt layer in 2006 and has exploration and production rights in 16% of the pre-salt.[307] Today, 80% of Petrobras' total production comes from the pre-salt.[308] The state-owned company touts pre-salt production as a more climate-friendly form of oil extraction, and purports that emissions from pre-salt extraction are "70% lower than the global average".[309] But these figures only account for emissions in the extraction process, not during the entire lifecycle of fossil fuel use. The emissions caused by the exploration stage of recently granted licences alone, considering both extraction and consumption, would account for 7.7% of Brazil's annual domestic emissions.[310] Moreover, this figure does not include other environmental impacts and risks of offshore drilling and the infrastructure that it requires.

Between 2000 and 2025, Petrobras received more than 2,700 fines from IBAMA, with 1,742 fines coming from the state of Rio de Janeiro alone.[311] Some 75% of the fines related to operations in coastal and marine biomes. At least 550 came from malfunctions on oil platforms. Fines against Petrobras were eight times higher than the next leading company and totalled BRL 1.14 billion (USD 209 million), though it is unclear how much of that money has been paid. While a major oil spill in 2000 is often referenced as the apex of Petrobras' environmental harm, IBAMA data shows that claims against the company have increased over time, resulting in more than one claim filed against Petrobras per day in 2023.

Petrobras has been criticized for participating in greenwashing, including advertising its support for a clean energy transition while continuing to invest in the expansion of fossil fuels.[312] In April 2025, Climate Action Against Disinformation found that "Petrobras… argue[s] that the fossil fuel industry is key for the energy transition, to meet energy targets and raise funds for investment in new technologies".[313] Yet, Petrobras spends only 15% of its budget to "decarbonize operations and diversify into low-carbon energies".[314]

(3) Offshore production

Offshore drilling, particularly in reserves as deep as Brazil's, poses significant technological challenges.[315] Brazil's pre-salt reserves are 5,000m to 7,000m below sea level.[316] Oil is buried under a thick layer of salt through which it is difficult to drill.[317] Exploration, drilling and extraction at these depths has environmental impacts that are rarely discussed publicly.[318] Exploration often requires seismic testing, which particularly affects marine species that use sound to communicate and navigate.[319] Extracting oil from the pre-salt requires penetrating underwater rock formations using "rotation, weight, and blasting methods".[320] The process of anchoring the rig and drilling has a significant effect on deep-sea marine ecosystems and disperses gravel that can disrupt, harm and suffocate marine life.[321]

The risk of major accidents, oil leaks or blowouts (uncontrolled flow of gas, oil or fluids) is inherent in any offshore drilling project.[322] Accidents are not uncommon, presenting dangers for the environment and for workers. In 2024 alone, a record 731 offshore oil accidents were registered in Brazil.[323] While major spills have not occurred in recent decades, "several spills have raised concerns regarding their ecological and socio-economic implications," including spills related to pipelines, transport terminals, platforms and tankers.[324] These oil spills have increased as the offshore oil industry has expanded and are particularly concerning due to the lack of consistent documentation and study of their effects.[325] Underwater pre-salt reserves house "vast quantities of unwanted gases, including hydrogen disulphide, which is extremely toxic, flammable, explosive, and corrosive".[326]

Closer to shore, the offshore industry requires pipeline construction to bring oil and gas to refineries, and dredging to accommodate shipping, which entails additional environmental disruption and harm.[327] Three new pipelines – Rota 1, Rota 2 and Rota 3 – are already online to transport oil and gas from pre-salt reserves.[328]

(4) National climate action and commitments

Brazil's 2024 NDC heralds a "Pact for Ecological Transformation" between the three branches of the Brazilian government, established via Decree 12.223 in October 2024.[329] The Pact identifies 10 commitments, among them: "guarantee[ing] the protection of specially protected territorial spaces, including conservation units and indigenous lands;" "investments in decarbonization of the energy matrix," and "promot[ing] economic activities that generate quality work and are compatible with the conservation of the ecological diversity of Brazilian biomes".[330] Brazil's National Policy on Climate Change was established in 2009 through Law 12.187.[331]

Brazil's 2024 NDC contains a new target to reduce emissions to between 59% and 67% of 2005 levels.[332] According to Brazilian CSOs, this target falls short of Brazil's fair share contribution to reduce global GHG emissions to limit global heating. Indeed, Brazil's projection models focus on upstream emissions (emissions from production, rather than fossil fuel use) and rely heavily on "highly ambitious" projections of carbon sequestration.[333] Such projections also lack sectoral targets.[334]

While the NDC promises "sustainable development based on technological innovation and the rational use of natural resources",[335] it does not directly address the oil and gas industry, nor the state's growing economic dependency on the sector. Touting Brazil's potential as an "agricultural-forestry, clean energy and neo-industrial powerhouse",[336] the NDC conspicuously makes no mention that the country is on track to be a top five global crude oil producer. While Brazil commits to continue seeking fossil fuel alternatives in its own domestic power supply,[337] energy transition measures outlined in the NDC place significant emphasis on expanding biofuels, particularly in the transportation and industrial sectors.[338]

CSOs have also expressed concerns at the NDC's failure to explicitly formalize the country's goal of halting and reversing deforestation and forest degradation by 2030, which contradicts President Lula's explicit zero-deforestation commitments made throughout his pre-presidential campaigning and as head of state.[339]

The President of COP30, André Aranha Corrêa do Lago, has emphasized the need to focus on commitments that countries have already made and "leverag[e] existing initiatives".[340] Yet, as outlined above, not far from the city of Belém where COP30 will take place, Brazil pushes forward with oil exploration plans at the mouth of the Amazon River.[341] This is but one example of how Brazil's climate commitments stand in sharp contrast to the centrality of fossil fuels to the national economy.

(5) Environmental human rights defenders

Environmental human rights defenders face severe risks and systemic violence in Brazil. Brazil ranks among the countries with the highest levels of violence against environmental human rights defenders,[342] second only to Colombia for the number of murders.[343] Much of this violence is related to disputes over natural resources and resistance against companies that threaten traditional ways of life and ecosystem integrity. Beyond physical and online threats, the weaponization of legal proceedings has been increasing, including criminal proceedings, to delegitimize, intimidate and weaken social movements and their leaders, increasing their vulnerability.[344]

If passed, several bills before Brazil's National Congress risk worsening the threats faced by environmental human rights defenders, including but not limited to Bill 490/07 (limiting Indigenous land demarcation), Bill 191/20 (allowing mining on Indigenous Lands) and Bill 3729/04 (loosening environmental licensing). These bills will give more power to agribusinesses, mining, infrastructure and fossil fuel companies, giving them even greater power in relation to Indigenous Peoples, traditional communities and environmental groups, increasing risks for defenders.

In 2024 the Inter-American Commission on Human Rights (IACHR) held a public hearing at the Organization of American States (OAS) to discuss criminalization, persecution, and violence against environmental defenders in Latin America, including Brazil. CSOs such as Justiça Global and Indigenous networks stressed that reactive responses to violations are insufficient. Many explained that robust preventive policies are necessary, involving effective protection of defenders closer to the territories where they reside, legal support to formalize the safety and security for defenders and traditional communities, and strengthening institutional mechanisms to provide guarantees of non-repetition.[345] Brazil's federal National Protection Programme for Human Rights Defenders, Communicators and Environmentalists (PPDDH), created in 2004, operates nationwide in conjunction with state-level protection programmes. Currently, 11 of Brazil's 26 states have active PPDDH programmes. In the remaining states, federal teams, collaborating with civil society, provide support. PPDDH faces significant structural challenges. Protection requests have surged by roughly 1,300% from 2014 to 2025, overloading teams and limited resources available. Limited staff deployment at state and local levels hinders the programme's effectiveness, especially in regions with high complexity and conflict such as the states of Amazonas and Mato Grosso do Sul.

Furthermore, Brazil has failed to ratify the Escazú Agreement, a regional treaty guaranteeing rights of access to information, public participation and justice on environmental matters, as well as protection for environmental human rights defenders.[346]

The case of Indigenous expert Bruno Pereira and British journalist Dom Phillips, murdered in June 2022 in the Javari Valley, Amazonas state, illustrates the high risks faced by environmental human rights defenders. Since then, the Ministry of Human Rights and Citizenship has implemented a collective protection programme involving several federal government bodies.[347] These actions focus on reparations, ensuring safety and preventing recurrence of violence in the region, including facilitating access to the PPDDH and improving territorial monitoring and communication infrastructure.[348]



(6) The "Devastation Bill"

In July 2025, Brazil's Congress reached consensus on the so-called "Devastation Bill" (PL da Devastação) marking a significant setback in Brazilian environmental legislation, profoundly altering the environmental licensing processes for large-scale projects and putting the integrity of critical ecosystems and the livelihoods of many at risk.[349] By weakening and simplifying licensing rules, the bill facilitates large-scale environmental degradation and weakens protections for Indigenous people, quilombola[350] and other traditional communities, and conservation areas. The bill poses grave risks of irreversible damage to these communities and biodiversity.

The bill has been met with strong resistance from local communities, CSOs including Amnesty International,[351] and the scientific community. UN Independent Experts and Special Rapporteurs have also expressed strong criticism,[352] emphasizing that the bill contravenes international environmental protection and human rights law and principles.[353]

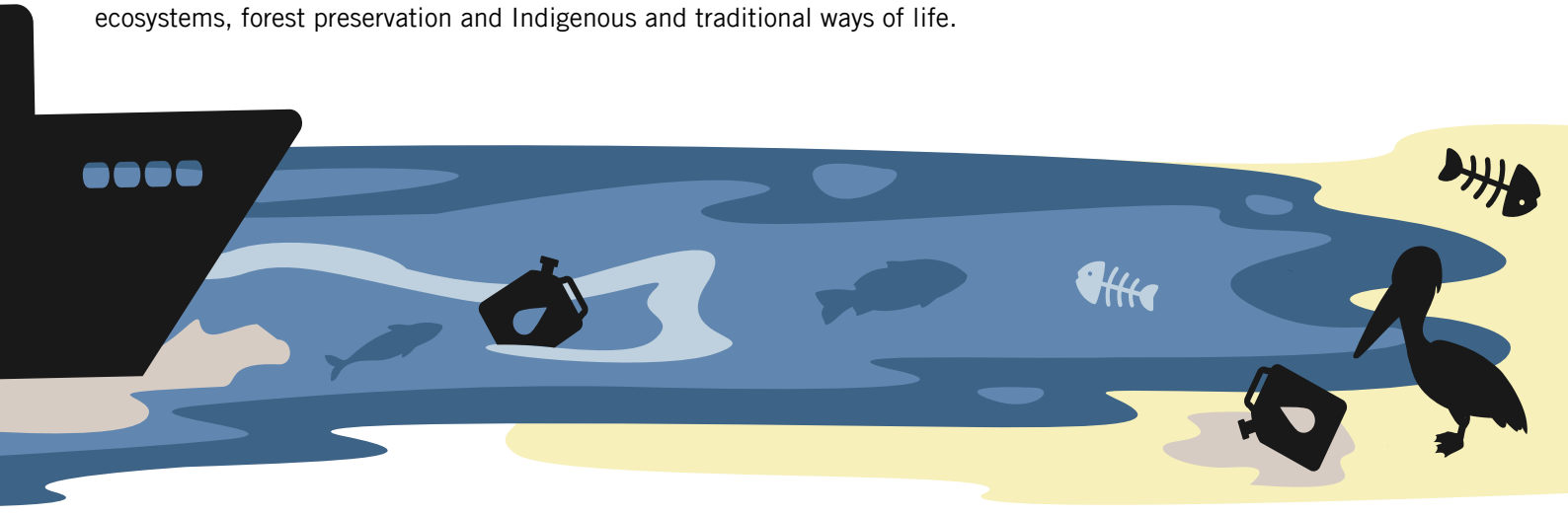
In response, President Lula partially sanctioned the law in August 2025, vetoing some of the most harmful provisions, such as permitting automatic licensing for medium-sized projects – a measure flagged by environmentalists as potentially unconstitutional and further weakening environmental protection.[354]

If the provisions described above are ratified by Congress, the Devastation Bill will erode the capacity of environmental protection agencies including IBAMA and the National Environmental System (SISNAMA).[355] This includes permitting self-licensing, whereby companies can obtain environmental licences based on simplified self-reporting without approval from environmental authorities. If so, IBAMA would lose much of its role in evaluating the environmental risks and impacts associated with extractive projects.[356] Meanwhile, public participation including public consultations and hearings would be increasingly reduced, undermining transparency and eroding the right of affected communities and civil society to voice their views on projects that may affect their territories and ways of life.

Furthermore, environmental agencies' means of enforcement will be weakened by resources cuts necessary to conduct effective field inspections, curb illegal deforestation, control pollution and protect natural habitats. This reduced capacity increases the risk that harmful environmental practices will proliferate without penalties or corrective actions, directly harming biodiversity and worsening climate impacts.[357]

Unsurprisingly, the Devastation Bill has received considerable support from sectors linked to agribusiness, energy, mining and infrastructure, which have lobbied for more permissive rules to authorize projects without adequate environmental safeguards.[358]

In the context of offshore oil exploration, the bill amplifies the likelihood of projects causing cumulative harm to marine ecosystems, forest preservation and Indigenous and traditional ways of life.



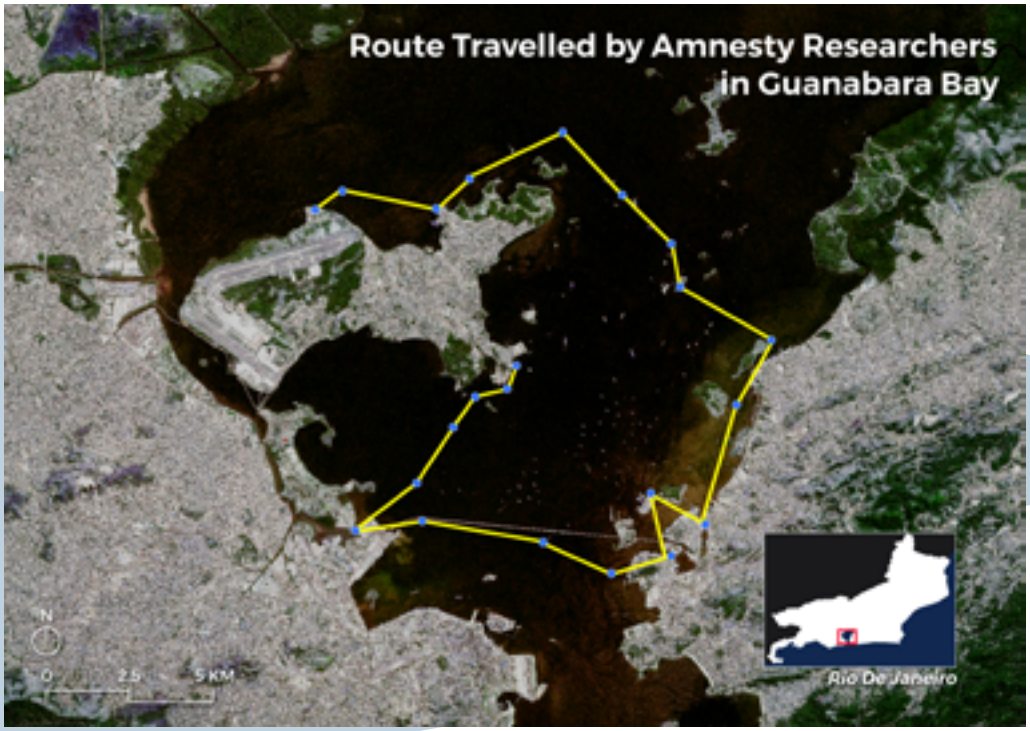
B) METHODOLOGY

(a) New research

In February 2025 a team of researchers from Amnesty International and Columbia Law School travelled to Guanabara Bay, in the state of Rio de Janeiro, and met with various stakeholders who have either experienced, witnessed and/or studied the activities and socio-economic and environmental impacts of the fossil fuel industry on the bay's watershed.

Researchers carried out individual and group interviews with 25 artisanal fishers, residing and fishing in different neighbourhoods and municipalities of Rio de Janeiro, including among others Magé, Maré, Tubiacanga and São Gonçalo. Artisanal fishers also guided Amnesty International researchers on two boat rides around Guanabara Bay, to observe fossil fuel infrastructure, shipyards and large industrial vessels anchored in or navigating through the bay. Researchers recorded their GPS coordinates using a satellite phone, and the maps below summarizes the itineraries they followed on 15 and 21 February 2025.

In addition to directly affected groups, researchers also spoke to four representatives of Brazilian and international CSOs, 9 academics, two journalists, three Rio state public prosecutors, two employees of the Environmental Agency of the state of Rio de Janeiro (Instituto Estadual do Ambiente, INEA) and one representative of the Secretary of Environment and Sustainability of the municipality of Guapimirim. Most interviews were conducted in Brazilian Portuguese, with the presence of a professional interpreter. All interviews were undertaken in a location that ensured the safety and privacy of the interviewees. Where researchers only obtained partial consent to relay a testimony, or where necessary to protect an interviewee's safety and/or security, pseudonyms have been used.



Map of Amnesty International researchers' boat ride in Guanabara Bay shown using location tracking data, Brazil, 15 February 2025 © Nessie Nankivell

Researchers carried out an extensive review of secondary literature including news clips, investigative pieces and academic publications to better understand the ecosystem of Guanabara Bay, its demographics, and the known environmental and socio-economic impacts of industries operating in the bay.

Amnesty International shared its findings and addressed a series of questions to Petrobras and its fully owned subsidiary Transpetro in a letter sent to the state-owned company in September 2025. Amnesty International also addressed right of reply letters to ANP, IBAMA, and INEA. Only ANP and IBAMA replied to Amnesty International in two letters received in October 2025. Amnesty International reflected their content in this report.

Where appropriate, Amnesty International has used maps and publicly available data to complement, corroborate and visualize the testimonies of stakeholders interviewed, particularly the perspective of artisanal fishers. To visualize the scale of maritime activity in Guanabara Bay, Amnesty International combined infrastructure maps with satellite and radar imagery. To supplement this, Amnesty International used the "Ship Detection Tool" built and operated by Ollie Ballinger at London's Centre for Advanced Spatial Analysis.[359] The Ship Detection Tool uses synthetic aperture radar (SAR) imagery to identify ships in port, at anchor or at sea.

In addition to broad conclusions on the impact of the fossil fuel industry's activities on Guanabara Bay's watershed and the traditional communities that rely on it, this report specifically focuses on the Petrobras operations because the state-owned oil giant was identified as a key stakeholder by local CSOs, journalists and environmental regulators interviewed, due to the scale and impacts of the company's activities, particularly following its spill in 2000.

(b) Past engagement with artisanal fishers of Guanabara Bay

Amnesty International has been monitoring threats faced by marginalized fishing communities of Guanabara Bay and supporting their campaigning since the late 2000s.[360] Amnesty International launched a first urgent action in 2010 calling for the protection of artisanal fisher and environmental human rights defender Alexandre Anderson de Souza, and calling for more effective implementation of the requirements set out under Brazil's National Defenders' Programme.[361]



Card from Amnesty International's 2012 global Write for Rights campaign, which featured the story of environmental human rights defender Alexandre Anderson de Souza © Amnesty International Brazil

In June 2012, two active members of the Associação Homens e Mulheres do Mar da Baía de Guanabara (AHOMAR) [Association of Men and Women of the Sea] – a collective of artisanal fishers from Guanabara Bay founded by Alexandre Anderson de Souza – were killed in obscure circumstances after several members received threats for their environmental justice activism. In July that year, Amnesty International launched a second urgent action calling on its membership to urge Brazilian authorities to thoroughly investigate the killings as well as all threats received by AHOMAR members and to provide Alexandre Anderson de Souza and his wife with full protection.[362]

Action carried out by Amnesty International Brazil on a beach in Rio de Janeiro, in support of artisanal fishers of Guanabara Bay, October 2012 © Amnesty International Brazil



C) GUANABARA BAY

Located in the state of Rio de Janeiro, Guanabara Bay is the second largest bay in Brazil.[363] With a total area of 384km^2, Guanabara Bay includes 130 islands as well as critical estuarine ecosystems such as mangroves and seagrass.[364] Approximately 55 rivers, streams and channels discharge into the bay,[365] and 16 municipalities sit on its watershed.[366]

Guanabara Bay's topography contributes to the concentration of pollution, particularly in the north.[367] The bay's shallow nature also makes dredging necessary to accommodate an increasing number of large ships, including those affiliated with the offshore drilling and shipping industries.[368]

(1) Fossil fuel industry's footprint

While the fossil fuel industry has had a presence in Guanabara Bay since the 1960s, industry activities in the area have accelerated rapidly since the discovery of the pre-salt reserves.[369] Within or bordering the bay are two ports (Rio de Janeiro and Niterói) as well as shipyards, storage tanks, several refineries, dozens of pipelines, and terminals for refuelling and other fuel processing and vessel maintenance services. This infrastructure has turned the bay into a "pivotal region in the national oil and gas industry",[370] servicing the oil and gas fields based more than 200km offshore.

Pollution in Guanabara Bay is widespread and comes from multiple sources including the oil and gas industry,[371] solid waste from other industrial activity and untreated sewage, among others.[372] Fenceline communities that rely on the bay's watershed or live near industrial infrastructure onshore are therefore confronted by the cumulative impact of multiple sources of harmful industrial and non-industrial pollution.

Contamination from the fossil fuel industry includes pollution from oil spills and other industry activities,[373] as well as oil dumping and ship-to-ship transfers in and outside of the bay.[374] The petrochemical industry – freight vehicles to trains, pipelines and port traffic – are also significant sources of this pollution.

Continued and repeated incidents of pollution and environmental damage caused by the fossil fuel industry in the same area over time is significantly different from a one-off incident of pollution. The expansion of the industry's activities and its support infrastructure will only worsen environmental degradation, disproportionately affecting marginalized groups.

(2) 'Petrobras' Bay

While several Brazilian and multinational oil and gas companies operate in the Bay, over the years, infrastructure operated by Petrobras and its fully owned logistics subsidiary Transpetro have shaped Guanabara Bay's waterways and onshore processing landscape.[375]

In 1961, Petrobras founded the oil refinery of Duque de Caxias (Reduc) on the Western shore of Guanabara Bay, which today accounts for 80% of lubricant production in Brazil and is also the country's most significant facility for fossil gas processing. The refinery is surrounded by smaller companies and businesses that support refining and processing.[376] In 2024 – despite years of sustained opposition by environmental human rights defenders – Petrobras launched operations at a new refinery in the municipality of Itaboraí.[377] The Boaventura complex connects with a pipeline processing crude oil extracted from the Santos basin.[378] It has significant new natural gas processing and lubricant production capacity.[379]

Transpetro also operates the Guanabara Bay Waterway Terminals comprising three main terminals located on Ilha Redonda (connected to Reduc by a gas pipeline),[380] Ilha d'Água (handling transportation of products to and from Reduc and providing fuel via pipeline to vessels docked at the terminal or anchored in Guanabara Bay),[381] as well as a regasification terminal with the capacity to transfer up to 14 million cubic meters of fossil gas per day to the Southeast gas pipeline network.[382] Petrobras also has a contract with a company that supports tugboat operations in the bay.[383]

(3) Key ecosystems at risk

The mangroves in Guanabara Bay are crucial for the environment and for local artisanal fishing communities. The majority of the bay's mangroves are in the 140km^2 northeast Guapimirim Environmental Protection Area.[384] However, over several decades the mangroves surrounding Guanabara Bay have degraded significantly.[385] Oil spills, particularly the 2000 REDUC disaster (see section below: "The Black Tide" 2000 spill), have severely affected the mangrove system in Guanabara Bay and the Guapimirim reserve.[386]

Mangroves, seagrasses and salt marshes constitute "nature's most effective carbon sinks".[387] Known as "blue carbon ecosystems", these coastal features play a critical role in removing carbon dioxide from the atmosphere.[388] Mangroves store up to 10 times more carbon per hectare than terrestrial forests.[389] They also perform other important functions, including "preventing erosion, coastal protection, species habitat, nutrient cycling, water purification, tourism, recreation and culture".[390] Known as the nurseries of the sea, mangroves are essential to maintaining population levels of many aquatic species.[391]

Mangrove ecosystems are delicate and responsive to small changes in the coastal ecosystem. While they can, to a certain extent, adapt to sea level rise, they are negatively affected by storms, changes in rainfall and salt levels, pollution and dredging.[392] Once mangroves are damaged by oil pollution, it takes at least a decade for the ecosystem to recover.[393] Only recently has the Guapimirim reserve recovered from the oil spill in the year 2000. Today, the reserve houses 30,000 mangroves following a lengthy restoration programme.[394] However, climate projections show that the area may be at risk of severe flooding due to sea level rise.[395] Meanwhile, the construction of a new petrochemical facility upriver from the reserve raises the spectre of potential future spills.

(4) Traditional communities relying on Guanabara Bay's watershed

"The Bay of Guanabara is really a sacrifice zone… the fishermen are always sacrificed for the benefit of industry, and they never have a reward."[396]

Wander Guerra, Director at the Secretariat of Environment and Sustainability of the municipality of Guapimirim



Currently, some 6,000 artisanal fishers rely on fishing as a means of subsistence in Guanabara Bay, across 28 communities,[397] yet artisanal fishing receives little attention from the government.[398] They use traditional methods and knowledge in their fishing practices. Brazilian journalist Emanuel Alencar explained: "When we talk about traditional communities, we talk about activities that have old roots, non-predatory ways of fishing… very old techniques passed down for many generations."[399]

Access to fishing is a question of personal and cultural survival. It is a way of life intertwined with community identity, culture and spirituality. As a community leader from the municipality of Magé explained: "We have a religion that stays trained inside of us, the religion of the moon… Because the phases of the moon give us times of more fish and less fish. So, we respect [that]. We know when we will get a lot of fish and when we will not get a lot of fish… We consider the Guanabara Bay as a mother."[400]

An artisanal fisher and environmental human rights defender from the municipality of São Gonçalo similarly explained: "We have a spiritual connection with the water. It's in our blood, it runs in our family, we never left, it's part of this."[401]

Artisanal fishers interviewed by Amnesty International reported fishing a variety of species in Guanabara Bay and in the bay's mangroves, depending on the season. During low fishing seasons, artisanal fishers registered with local authorities may be eligible to receive social benefits referred to as defeso.[402]

They explained fishing with a can, hand-made nets or corrals, a traditional fishing technique native to Guanabara Bay that uses enclosures to trap fish. They described these methods as more sustainable than industrial fishing techniques, which involve wasteful by-catch.[403]



(Above) Photo of tops of corrals, visible on the water surface; (Below) Photo of artisanal fisher using a fishing net, Guanabara Bay, Rio de Janeiro (Brazil), February 2025 © Amnesty International (photographer: Candy Ofime)



"[Brazil has] this predatory approach that has penalized traditional communities, Black and marginalized communities… Traditional communities counteract the large fishing industry."

Emanuel Alencar, journalist

Artisanal fishing communities are recognized as legally protected traditional communities in Brazil.[404] Brazil's National Policy on Sustainable Development of Peoples and Traditional Communities, issued in 2007, defines "traditional communities" as "culturally differentiated groups that recognize themselves as such, that have their own forms of social organization, and occupy and use territories and natural resources as a condition of their cultural, social, religious, ancestral, and economic reproduction, using traditionally generated and transmitted knowledge, innovations, and practices".[405] Among other rights, the policy recognizes traditional communities' rights to food and nutritional security, access to traditional territory and natural resources, and sustainable development.[406]

FINDINGS

"Because Guanabara is an industrial bay, it is fundamental for the oil industry of Rio de Janeiro."

Wander Guerra, Director at the Secretariat of Environment and Sustainability of the municipality of Guapimirim[407]

According to INEA, Rio de Janeiro's oil comes exclusively from offshore exploration and contributes more than two-thirds of Brazil's national oil production.[408] The Port of Rio de Janeiro itself, located in Guanabara Bay, "occupies a key position for the transport of oil production".[409]

During boat rides across Guanabara Bay, Amnesty International researchers witnessed vessels, shipyards and infrastructure, including gas flares, servicing the oil and gas industry.





Oil tanker (left) and gas flare (right) in Guanabara Bay, Rio de Janeiro (Brazil), February 2025 © Amnesty International (photographer: Candy Ofime)

D) OIL SPILLS AND ENVIRONMENTAL DEGRADATION

(1) "The Black Tide" 2000 spill

Petrobras' 2000 oil spill had national repercussions and marked a turning point for both artisanal fishers and Brazil's regulation of the oil industry. The incident occurred in the early hours of 18 January 2000, when Petrobras' PE-II pipeline, which transported fuel oil from Reduc to the island of Ilha d'Água, ruptured causing approximately 1.3 million litres of oil to spill directly into Guanabara Bay.[410] In less than 24 hours, the water and sands of several beaches in the south of the bay turned black.[411]

Newspapers referred to the environmental disaster as the "Black Tide".[412] Brazilian authorities found that a sequence of errors in Petrobras' containment plan exacerbated preventable environmental damage.[413] Worse, Petrobras ignored federal authorities' recommendations, allowing the oil slick to reach the environmentally protected Guapimirim reserve.[414]

With an area of approximately 135km^2 affected, INEA described the incident as "undoubtedly the most significant environmental accident in the history of Rio de Janeiro, not only because of its catastrophic proportions, but also because of its widespread national repercussions".[415] The agency found that "countless animals died, vegetation was completely lost", while damage to Guanabara's mangrove forests was particularly severe.[416] Furthermore, INEA stressed that:[417]

"Fishers were unable to fish for months, extending the social impact of the tragedy. To this day, groups of fishermen are fighting in court for compensation."

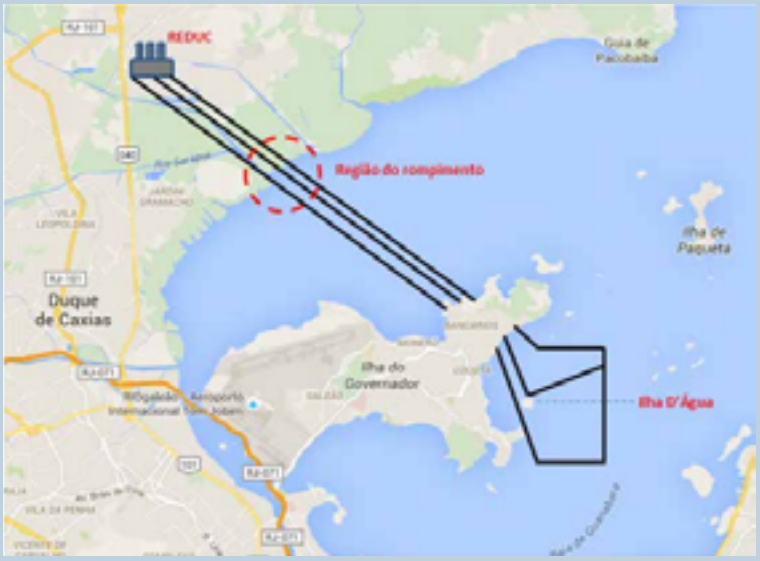
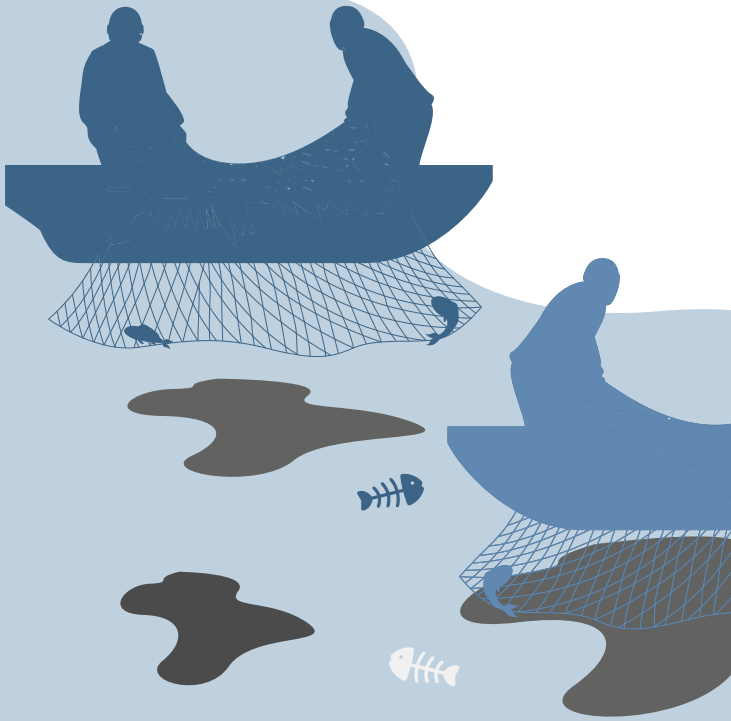
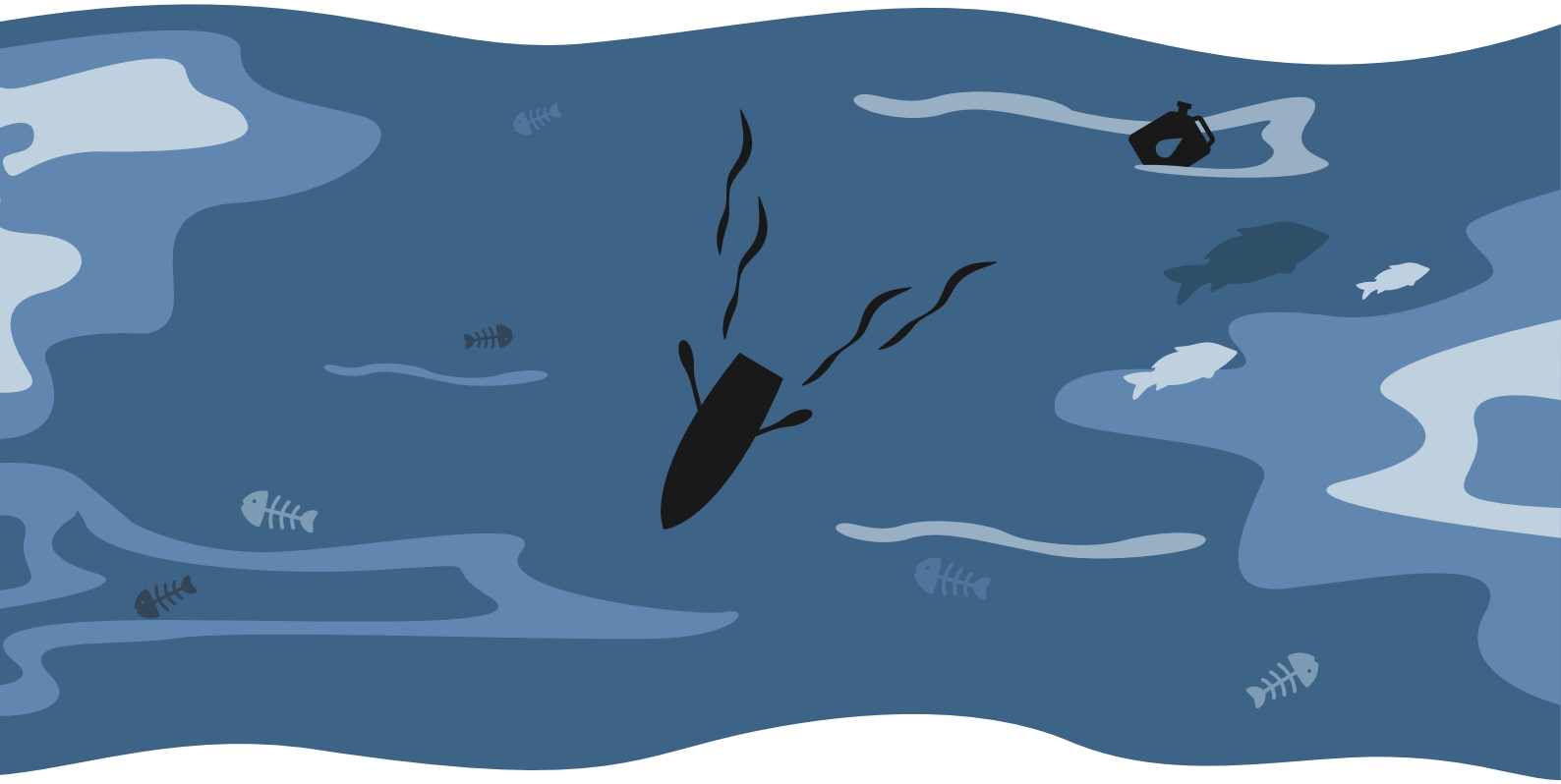


Illustration of location where Petrobras pipeline rupture occurred in 2000 included in INEA's 2018 oil spills report on Guanabara Bay © INEA



Several artisanal fishers interviewed by Amnesty International alluded to the long-term impact of the 2000 spill. For example, an artisanal fisher and community organizer from Maré shared that: "the 2000 oil spill from Petrobras… caused damage to all of the fishing communities in Guanabara Bay. With the contamination we couldn't fish, there was nothing to fish, with that stain in Guanabara Bay."[418] Her brother also told Amnesty International: "I was fishing without a registration, so I didn't receive compensation. [Among] registered fishers, some received compensation, some didn't. Because of the spill, I had to go back to a job on land, it affected fishers."[419]

An artisanal fisher who volunteers to register their economic activity with Brazilian authorities added: "In order for us to pursue our rights, we need lawyers, but we don't have the financial resources to do so. We didn't have documents; we were invisible to the authorities."[420]



An artisanal fisher and community organizer from São Gonçalo told Amnesty International: "since the spill of the year 2000, things have not looked good… The large spill killed many fishes, we haven't seen [restoration] of the fish because of the many [subsequent] disasters".[421] An artisanal fisher and community organizer from the municipality of Magé similarly shared that: "We've had fewer fish since 2000… that crude oil was not removed. And now, it is in the soil layer."[422]

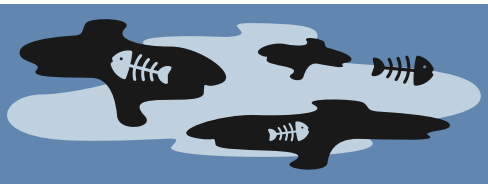
Brazilian academics interviewed for this report confirmed that the 2000 spill sparked unprecedent mobilization and community organizing of artisanal fishers from all around Guanabara Bay. For Wander Guerra, Director of Environment and Sustainability at the Secretariat of Environment and Sustainability of the Guapimirim municipality, the "Black Tide" represents the moment when artisanal fishers "got together to face the oil industry".[423]

As a result of Petrobras' 2000 spill, the "Oil Law" (Federal Law No. 9,966 of 2000) was enacted, establishing more severe penalties for similar environmental disasters.[424]

(2) Daily impacts of oil spills on artisanal fishers

Within a month of Amnesty International's on-the-ground research in Rio de Janeiro, several incidents associated with oil industry operations occurred in Guanabara Bay. On 28 January 2025, INEA identified a large oil slick off Boa Viagem beach in Niterói municipality, which it attributed to the drillship Atlantic Zonda.[425] INEA found that, in addition to the environmental harm caused, the vessel operators had failed to report the incident.[426] In the same month, INEA located a shipyard in Niterói and a marina in São Gonçalo that were both spilling oil into the bay.[427]

On 8 February 2025, an oil and lubricants factory on Ilha do Governor caught fire, creating a serious risk of oil and other chemical waste leaking into the bay.[428] According to Rio de Janeiro's state authorities, 100 military firefighters as well as agents from 20 state Civil Defence units were deployed to contain the fire.[429]



"I see oil in the water, nearly every day, we see those stains, we talk, we complain to the authorities, but there's no law, no justice, there's impunity."

An artisanal fisher from Maré, Rio de Janeiro

Most artisanal fishers interviewed told Amnesty International that they either see or receive information from other fishers about oil spills in the bay nearly every day, and at minimum weekly.[430] An artisanal fisher from the neighbourhood of Maré shared that: "Every day when we go at sea, we see oil stains. You see some that are really big, even 200m wide. This water here should be treated, to protect nature."[431]

Another artisanal fisher who is also from Maré said: "The other day when I left to work at sea, close to Niterói, where there is the Canal do Mange, I was catching quite a good amount of fish. That day, there was a ship coming in to be repaired… When I pulled my fishing net back [the next morning], it was full of oil."[432]





Images of the departing point for artisanal fishers from the neighbourhood of Maré in Rio de Janeiro (Brazil), February 2025 © Amnesty International (photographers: Matias Maxx and Candy Ofime)

Artisanal fishers from other localities around Guanabara Bay shared similar accounts.[433] They told Amnesty International that oil spills occur as a result of different types of activities or operational failures, including transfer of oil from ships to onshore facilities, ship-to-ship transfers (including in the course of refuelling), as well as during ship maintenance and repairs or as a result of oil theft.



For example, an artisanal fisher from Maré shared that spills tend to occur during "oil transfers and fuelling of the ships, because they do it inside the water". He explained that smaller boats usually travel to refuel larger vessels, and stressed that "most of the spills come from these towboats".[434] His son also noted that "maintenance is not done in a preventive way, it's not done properly, [they use] no contention [systems], so spills happen when they do the repairs."[435] Another artisanal fisher and community organizer from São Gonçalo mentioned that spills also occur when ships wash their tanks.[436]

Several stakeholders interviewed noted that these operational failures tend to happen outside the scope of environmental monitoring carried out by Brazilian authorities. Carlos Tautz, a Brazilian journalist covering socio-economic and environmental justice matters in Guanabara Bay, told Amnesty International: "They choose to do this sort of operation over the weekend or on holidays, because there is no authority on the weekend."[437]

Several artisanal fishers shared similar concerns. An artisanal fisher from Maré shared that "usually spills occur during the early hours of the morning when there is no surveillance, the spills happen during the dark hours, then the sea comes and takes the oil away, so it's difficult to identify where it came from. It would be good if there was some surveillance during the night with infrared, oil would be detected quickly."[438] An artisanal fisher from São Gonçalo also told researchers that oil spills tend to occur when ships "bring the extracted oil to the terminals and make the transfer" or during "fuelling, but that mostly happens at night".[439]

During a group interview conducted with eight artisanal fishers in São Gonçalo, participants explained that oil tankers would often wash their tanks using what they referred to as "the detergent trick," using other products that would chemically disperse the oil, rendering eye-detection nearly impossible. One interviewee explained the trick as follows: "they wash the ships with detergent, because detergent neutralizes oil, it doesn't appear in the sea [at the surface of the water]. Because they found out that the detergent neutralizes the oil for it not to appear."[440] Alexandre Anderson concurred, adding that:[441]

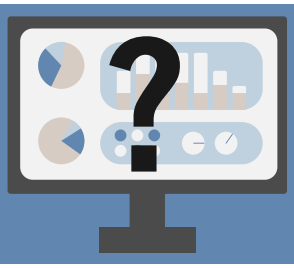


"Detergent is also a chemical product that shouldn't be released in the sea, so it's double pollution. It kills fish. We can say that these companies are committing two environmental crimes at once. The fishers know this, they denounce it, but public powers are doing nothing."

(3) Artisanal fishers' calls for better environmental monitoring of Guanabara Bay

Despite their growing marginalization, and the well-documented dangers that environmental human rights defenders face in Brazil, artisanal fishers have extensive knowledge of Guanabara Bay's ecosystem and many have voluntarily become water defenders, monitoring environmental risks threatening their lifestyle and means of subsistence. Patrolling the bay on a daily basis, they are often witness to environmental crimes that may fall outside the scrutiny of environmental authorities.

Several artisanal fishers interviewed pointed to the absence or limitations of environmental monitoring carried out by Brazilian authorities. An artisanal fisher and community organizer from Magé pointed powerfully to these failures:[442]



"We have some institutions responsible for [environmental] monitoring… But when we asked for that information, it's not available in a clear way… [When we ask INEA, the municipality or state authorities], they don't have concrete data. Some of them say that they don't have boats [to patrol the bay], others say their management system is not up to date, or that the areas [of concern] are inaccessible."

Many artisanal fishers whom Amnesty International interviewed complained about the lack of consideration, support and responsiveness of Brazilian authorities since the "Black Tide" spill, of feeling left behind and invisible to environmental authorities. For example, an artisanal fisher from São Gonçalo, said: "It's like they don't see us."[443] An artisanal fisher from Maré also told Amnesty International: "It's not just pollution, not just the oil and gas, but also the public policies that are not working, rights do not reach us. We scream, scream, but it's like shouting into a void, because nobody hears us. We're not heard by any of our authorities in our country, we feel abandoned."[444]

Camila Pierobon, post-doctoral researcher at the Brazilian Center for Analysis and Planning (CEBRAP), explained: "The bay is hard to monitor because different groups and entities are monitoring different parts. IBAMA didn't even have boats until now."[445]

For Emanuel Alencar, these gaps in environmental monitoring lead fossil fuel companies to opt for less costly, and often more polluting, operational models.[446] He believes it is essential to strengthen the capacity of environmental agencies, both with regard to licensing, but also their monitoring capacity post-licensing.[447]

(4) Petrobras' environmental monitoring activities

According to Petrobras's subsidiary Transpetro runs an Emergency Response Centre which provides equipment in response to "accidental pollution incidents" and facilitates training to terminal employees.[448]

Among other things, the company claims to have containment equipment, oil skimmers and vessel docked at Ilha d'Água, ready to be deployed at all times.

Petrobras had not replied to Amnesty International's request for information or responded to the findings presented in this report at the time of its publication.

(5) De Olho no Mar: INEA's oversight

In 2019, INEA published a report assessing the impacts of oil spills in Guanabara Bay, analysing 285 incidents that occurred between 1983 and 2016 – roughly eight incidents per year – including Petrobras' 2000 oil spill.[449] The agency stressed that: "the number of incidents recorded is closely related to the number of reports or complaints received by [INEA]. The region studied does not have monitoring devices capable of determining the actual number of incidents. The records, therefore, illustrate the profile of incidents reported during the period studied."[450]

INEA further noted that, during the 2016 Olympic and Paralympic Games, the state of Rio de Janeiro established a special action plan, jointly designed and implemented by INEA and fossil fuel companies, to monitor and combat oil spills in Guanabara Bay.[451] The plan included daily flyovers of the entire southern region of the bay, vessels chartered by INEA known as "eco-boats" to collect floating debris, and other resources provided by corporate participants in the plan.[452] During the 22-day period of heightened monitoring, INEA recorded a total of 76 oil spills.[453]

The agency found that, by extrapolating the number of spills identified during the period of the 2016 Olympic Games, 1,325 oil spills could be occurring yearly in the bay – demonstrating the serious gaps inherent in environmental monitoring that relies on voluntary or spontaneous reporting.[454]



INEA has publicly recognized that: "The case of oil spills is a clear example of the limitations that the Agency currently faces."[455] As a response, the agency created a programme called De Olho no Mar (Eye on the Sea) to intensify monitoring and immediate responses to irregularities in waterway transportation related to projects licensed by INEA, and to respond to "orphan" oil spills – spills of unknown origin – in Guanabara Bay.[456]

During Amnesty International's interview with INEA's environmental agency employees, they acknowledged the limitations of the tools and resources at their disposal to monitor the environmental impacts of the oil and gas industry across Guanabara Bay's watershed. Adriana Teixeira (pseudonym), who works with INEA's hazardous materials ('hazmat') emergency response team told Amnesty International: "The object of our work is the bay, to do the monitoring, [but] I'd need a ship to patrol more than 35km^2, we don't have boats, we have some agreements with companies for them to provide this service for us."[457] She pointed out that INEA has intensified its monitoring efforts around Guanabara Bay since 2021-2022, and now provides economic incentives for companies to carry out monitoring activities using new remote sensing technologies.[458] However, she recognized that attribution remains difficult to establish in many cases: "Today we don't have a tool to identify who caused that pollution, or contamination. We have cases that simply appear."[459]

"We know about spills because of population reports – journalists, morning news from companies operating, from people. We don't have people who patrol the bay. The other way is social media,"
said Adriana Teixeira.

To illustrate existing gaps, Felipe Costa (pseudonym), another employee of INEA's hazmat emergency response team, told Amnesty International: "We are shortsighted, we need glasses and we don't have them."[460] Despite ongoing institutional limitations, both Adriana Teixeira and Felipe Costa told Amnesty International that there were fewer oil spill incidents, in part because "companies have been investing in prevention".[461]

Adriana Teixeira confirmed that, nowadays, spills tend to occur during oil transfers and refuelling activities, "they are small spills that happen during change of equipment." According to her, such spills occur when large industry vessels as well as artisanal fishers carry out maintenance activities with their boats.[462]

(6) De Olho na Guanabara: grassroots environmental monitoring

In response to existing gaps in environmental monitoring, in July 2024, artisanal fishers from the AHOMAR network, with the support of the Brazilian branch of the NGO 350.org, launched an application known as De Olho na Guanabara (Eye on Guanabara), allowing artisanal fishers patrolling the bay to record oil spills and share information with federal and state authorities in real time.[463]

An artisanal fisher and community organizer from Maré told Amnesty International: "We used to send pictures and, in most cases, we were neglected, it wasn't considered as evidence. The app made it easier... [It sends the information] to the authorities directly. The app enabled our voice to be heard, you can take a pic and geolocate the [oil slick], so the authorities have the info."[464]

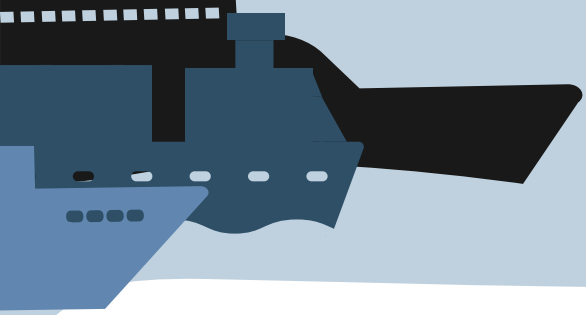
To date, the application has collected at least 28 reports which have been made public. At least nine reports specifically identify oil spills which an artisanal fisher witnessed, photographed and reported to the platform. The incidents documented through De Olho na Guanabara only represent situations where fishers were able to safely and directly observe a spill, and likely under-represent the true number of oil spills eye-witnessed in Guanabara Bay.

E) ARTISANAL FISHERS' BATTLE FOR SPACE: MARITIME TRAFFIC AND ZONING



"Where we used to see grey dolphins coming and going, now it looks like we have an industry anchored in the bay."
An artisanal fisher from Maré, Rio de Janeiro

INEA's last oil spills assessment report noted the presence of 14,000 industrial projects in Guanabara Bay's hydrographic basin.[465] The report specifically found that:[466]

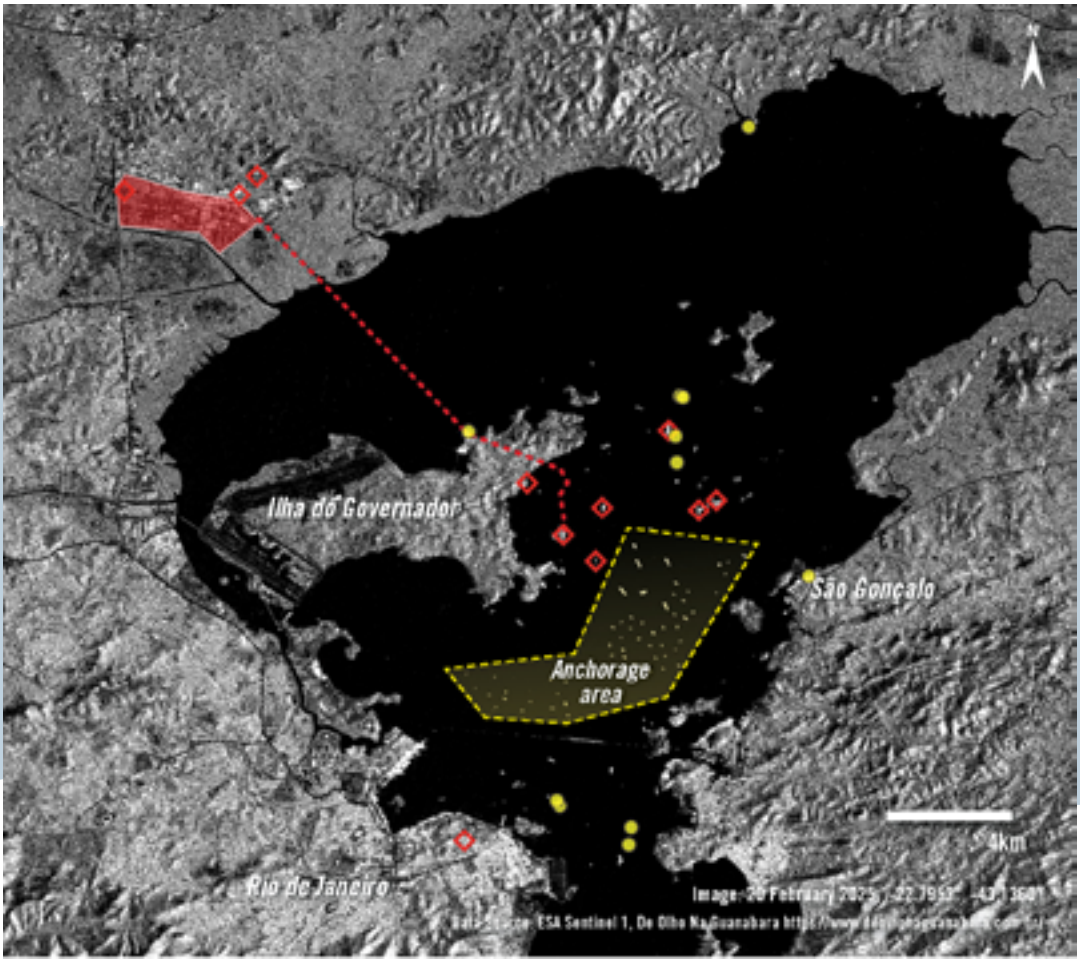


"All this infrastructure also causes heavy vessel traffic… 80% of vessels are available to the oil industry."

(1) Overall increase in maritime traffic

Artisanal fishers described a fundamental disruption to their living and fishing space through the progressive build-up of fossil fuel infrastructure including petrochemical facilities, docks and refuelling zones. In addition to stationary infrastructure, the transportation, transfer and transformation of fossil fuels to and from offshore platforms poses a daily challenge to artisanal fishers.[467] Oil tankers enter the bay to deliver oil or refuel, supported by other vessels such as tugboats that crowd the maritime space. Recently, Brazilian media have reported on the queues of oil tankers (attributed to record high volumes of production from pre-salt blocks) lining up at the entrance of Rio de Janeiro's port, beyond the port's current capacity.[468]

Together, these activities have a cumulative effect. Artisanal fishers explained this change over time, but to visualize the scale of the disruption to the bay, the map below shows the footprint of the fossil fuel industry on a given day in the bay.



Synthetic aperture radar imagery (SAR) measures the reflectance of radio waves to produce an image. Metal ships on water produce high variances in reflectance, often making them easy to distinguish. In the image above, large vessels are visible throughout the bay as white features on the dark bay water. Most of the vessels are densely located near the fossil fuel infrastructure owned by Petrobras – shown in red. Other semi-permanent zoning restrictions identified by artisanal fishers, such as buoys and anchorage areas, are highlighted in yellow.

Vessels from the fossil fuel industry disrupt artisanal fishing in several ways. Large oil tankers take up a lot of space and artisanal fishers cannot safely pass them closely. An artisanal fisher who belongs to the urban fishing community of Maré told Amnesty International: "What harms us nowadays, is the coming and going of large ships. They occupy our space."[469]



An artisanal fisher rows past large commercial vessels in Guanabara Bay, Rio de Janeiro (Brazil), February 2025 © Amnesty International (photographer: Matias Maxx)

Other vessels servicing offshore activities such as maintenance of submarine pipelines, drilling ships, tankers and platform supplies also encroach upon artisanal fishers' historic fishing grounds.[470] An artisanal fisher from São Gonçalo explained: "Our problem now are these tow boats, we just received a letter that three more will arrive in the bay. They think it's their right, and they are taking our space. They built two piers for the oil tankers, and that takes away the space for the fishers."[471]

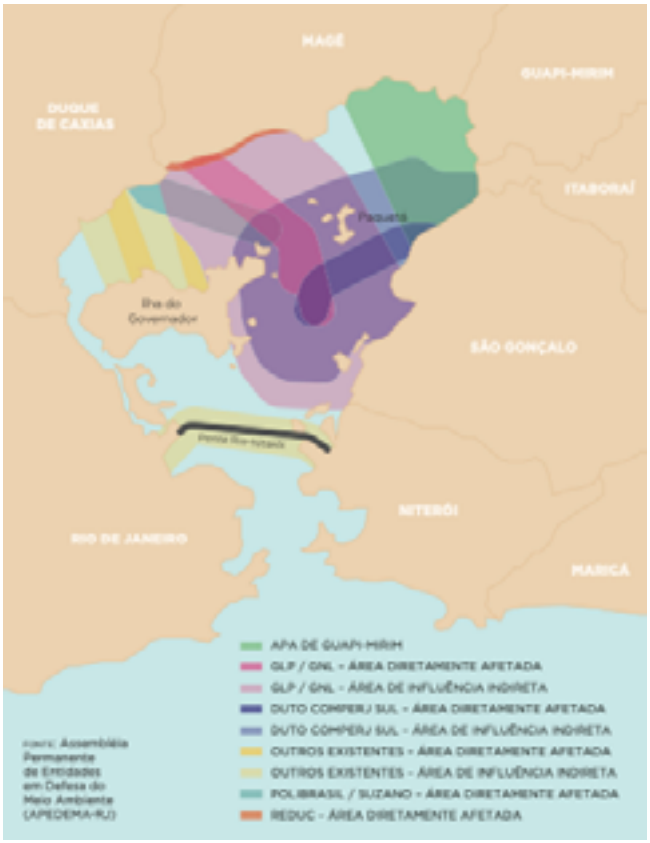
(2) Zoning and shrinking of fishing areas

All artisanal fishers to whom Amnesty International spoke expressed deep concerns about the ever-shrinking space in which they are allowed to fish. An artisanal fisher and environmental human rights defender from São Gonçalo explained that:[472]

"Guanabara Bay, in reality, it represents everything, it's our livelihood, and our struggle is with large companies. Sometimes we don't have any more space to fish, it's something we always tell them. We are not after money, we only want what is ours, we just want to fish in Guanabara Bay, it's our right. And they are taking our rights."



Brazilian geologist Carla Ramôa Chaves mapped that, as of 2016, only 12% of Guanabara Bay remained accessible for artisanal fishing.[473] The map below, produced by a group of Brazilian environmental justice CSOs, illustrates the spatial limitations experienced by artisanal fishers:[474]



Map of areas where artisanal fishing is excluded in Guanabara Bay[475]
Source: Assembleia Permanente de Entidades em Defesa do Meio Ambiente – APEDEMA-RJ (Permanent NGOs Assembly for Environmental Defense)

The same concerns were echoed by artisanal fishers from different parts of the bay. An artisanal fisher from Maré told Amnesty International: "We're not able to fish in what used to be our fishing sectors. These fishing sectors are close to the canals, those are places where fish would go to feed, but now they are occupied by the boats, now the closer we get to land, the more [sewage] pollution we see."[476]

This dramatic shift in fishing space and conditions is reducing the number of people attracted to the practice altogether. An artisanal fisher and community organizer from Tubiacanga said: "Now our fishing area is disappearing and they are ignoring this… We are losing space. I had 700 fishermen in the association… And now I have 78."[477]

"Guanabara Bay is the parking space of the offshore drilling [industry]."
Emanuel Alencar, journalist

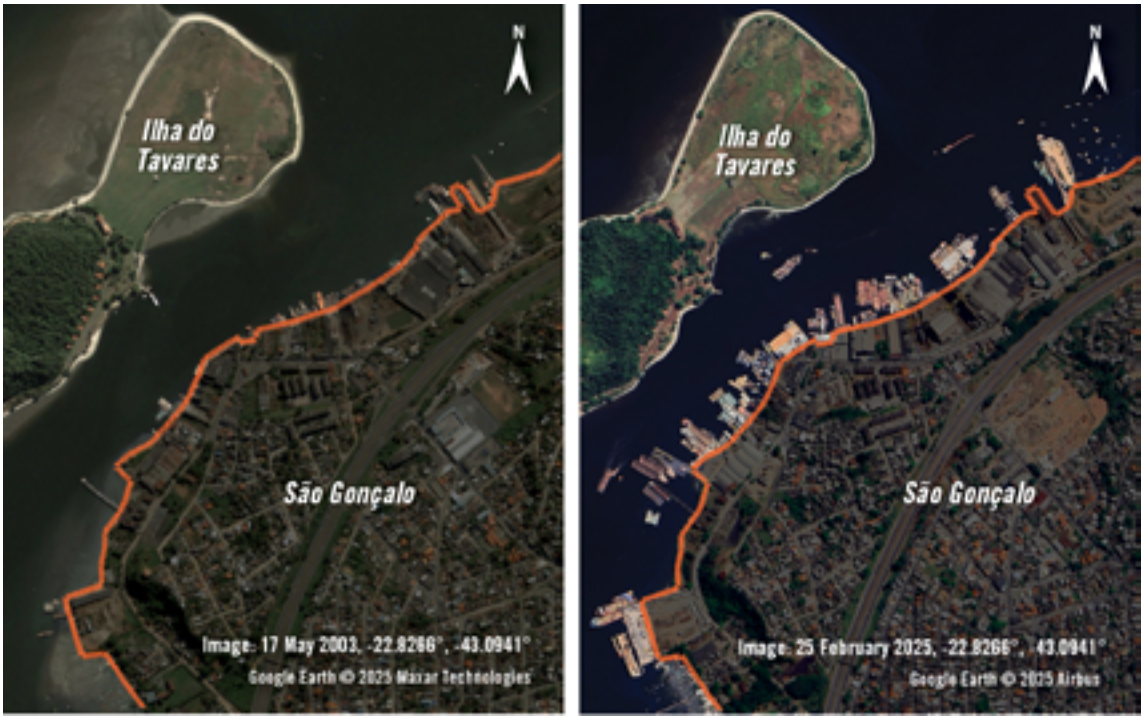
Artisanal fishers interviewed by Amnesty International did not only complain about large vessels moving through Guanabara Bay, but reported several issues associated with the growing number of ships anchored in the bay. Adriana Teixeira, INEA employee, validated these concerns: "Each day, artisanal fishers are oppressed, because they are losing fishing areas. They report that so many vessels are stationed here at the bay, and they have to keep 100m distance from ships anchored, but they can't tell the fish to do that, which is why there is conflict, they are fishing close to large boats."[478]

SPOTLIGHT ON SÃO GONÇALO



Artisanal fishing boats in São Gonçalo, Rio de Janeiro (Brazil) February 2025 © Amnesty International (photographer: Candy Ofime)

On 21 February 2025 an Amnesty International researcher travelled to São Gonçalo and carried out a group interview with eight artisanal fishers from an artisanal fishing community based in Praia Das Pedrinhas. This locality has been progressively eroded by a growing shipyard servicing the oil and gas industry.



Satellite imagery from 2003 (left) and 2025 (right) shows the expanding sprawl of industrial and maritime activity southeast of Ilha do Tavares off the coast of São Gonçalo., Rio de Janeiro, Brazil.



Artisanal fishing boat built in São Gonçalo, Rio de Janeiro (Brazil) February 2025 © Amnesty International (photographer: Candy Ofime)

An artisanal fisher and community organizer from São Gonçalo told Amnesty International: "I am from a community where the main issue is sharing the space with the anchored ships [fondeyo]. The fisherfolk are losing the space for our boats… A fisherman who doesn't have any space is a fisherman who suffers."[479]

An artisanal fisher from São Gonçalo also shared:
"We're the most harmed, because [São Gonçalo] is the place where the most ships anchor."[480]

Artisanal fishers from São Gonçalo told Amnesty International that they raised their concerns directly with the navy, to no avail. One interviewee told researchers: "We have no voice here, no space, it's always their preference. Even if you go to the navy, they give the preference to [industry]. We took this issue to the navy, spoke to them about the number of ships, they told us that there's nothing that can be done because that's what moves the country."[481]

All interviewees in São Gonçalo reported observing an increase in the number of vessels anchored and obstructing their activities. They predicted the situation would get worse. On a printed map of the bay, One interviewee drew dozens of dots, explaining: "Each of these dots is a ship… I believe there are nearly 100 ships. Ships can be 50 or 100 meters long… In addition to the ships, they are now establishing terminals. It's as if it was a gas station in the middle of the bay for refuelling, and it's not just one. These fuelling stations are between São Gonçalo and Ilha do Governador, in addition to the islands… where they produce gas."[482]

Amnesty International attempted to estimate the number of vessels traversing São Gonçalo using the SAR Ship Detection Tool[483] – an open-source tool that detects large vessels using 10 metre resolution SAR imagery. Between January and September 2025, the tool detected a range of 64 to 93 vessels per day; however, this tool likely under-counts the total number of vessels given the lower resolution of the imagery.



Map showing the results from the SAR detection tool from 20 February 2025. Ships detected with the tool are highlighted in green. Ships are visible throughout the bay, including heavy concentrations along the coast of São Gonçalo., Rio de Janeiro (Brazil).

The compounded impacts of reduction in space and an increase in industry vessels is driving conflict not only between artisanal fishers defending their fishing ground against industrial activity, but also against one another. An artisanal fisher from Maré explained: "I'm one fisher, among thousands in the bay, the bay is not that big, so we see a dispute for the spaces that are left, so we're starting to confront each other because of lack of space… Why don't [these big ships] anchor outside?"[484]

Felipe Costa – employee of INEA's hazardous materials' emergency response team – explained that the lack of space is pushing artisanal fishers towards environmentally protected areas, creating pressure on the bay's carbon sinks and biodiversity. Emanuel Alencar similarly told Amnesty International: "It makes [fishers] concentrate in ever smaller spaces in the Guapimirim protected area."[485]

The large number of ships prevents artisanal fishers from using traditional fishing techniques previously in use for generations. An artisanal fisher and environmental human rights defender from São Gonçalo explained: "We used to throw our nets from one point to the other, now we can't do this anymore, you throw your net here and you're faced with a ship, and you have to take it out of the water. Material for the net is expensive. We are facing difficulties, especially if we have to repair nets every time."[486]

An artisanal fisher from Maré similarly told Amnesty International: "When I started, there were only three large ships, now we can see over 60. The other day, it was 5am… we saw this large Japanese ship. The ship released its anchor on our net, and we lost everything. The net, and all the equipment".[487] Alexandre Anderson further explained, "we have our personalized nets, we even have little lights for people to know where nets are, and they don't respect us, they just roll over the nets and don't respect us at all, and we are the ones that are harmed."[488]

Several interviewees mentioned that this incursion leads to collisions that can be deadly. Camila Pierobon, post-doctoral researcher at CEBRAP, told Amnesty International: "Some huge oil ships collide with small fishing boats and fishermen have died because of that."[489] An artisanal fisher from Maré confirmed that: "Our boats are very small, sometimes not well lit, the darkness can be very thick, then commanders of large towboats don't see the smaller boats and run over them."[490]

Increased vessel presence also contributes to noise pollution in the bay. As an artisanal fisher from Maré explained: "Sound, they keep releasing the anchor all the time, that generates sound pollution, the fish will not stay close because of the sound. They keep releasing their anchor, day and night." An artisanal fisher from Tubiacanga similarly told Amnesty International: "There is a lot of noise, boats are coming and going day and night. Fish are sensorial beings, when they hear these noises, they swim away."[491]

(3) Ship cemeteries

In addition to active vessels anchored or navigating through the bay, there are also "ship graveyards" or areas where decommissioned or abandoned vessels have been left to sink into the bay. Some of these vessels are related to the fossil fuel industry.

Adriana Teixeira told Amnesty International that sinking ships are an historical issue. She explained that "there are companies that take from the ship only what is of commercial interest and leave it [the remainder] here… In Niterói and São Gonçalo, [INEA] observed 80 shipwrecks, vessels that don't have any more navigability or [are unusable due to] legal issues [for example, no owner], we have a project now to take these ships out."[492]

In February 2025, Amnesty International observed and photographed several large abandoned vessels sinking in the bay.





Sinking, abandoned vessels in Guanabara Bay, Rio de Janeiro (Brazil), February 2025 © Amnesty International (photographer: Candy Ofime)

F) EROSION OF THE MANGROVE

"If you know the mangrove, it's responsible for carbon sequestration and a lot of biodiversity... It's a free defence of nature, that we have for free! From my point of view [the mangrove is saying]: 'I'm imprisoning death and I release life for you, and you are not taking care of me'."[493]

An artisanal fisher and community organizer from Tubiacanga

The loss and degradation of mangrove ecosystems ("mangrove erosion") has particular economic, environmental and livelihood impacts for fishing communities in Guanabara Bay. They are nurseries for fish and other aquatic species. They are also the key ecosystem for artisanal crabbing, an important traditional industry in the bay. Oil pollution both harms the mangrove trees and makes them less attractive for aquatic species.

Over time, mangroves of Guanabara Bay have been lost both through clearing to make space for new infrastructure and industry installations, and due to pollution-related damage.[494]

Little remains of historic mangroves on the west side of Guanabara Bay.[495] Cleonice Puggian, associate professor at Universidade do Estado do Rio de Janeiro (UERJ) [Rio State University], explained that in the area of the Duque de Caixias-Reduc facility: "The mangroves were destroyed by the refinery so that had a huge impact on the community".[496] Alessandra Baptista di Oliveira Silva, an artisanal fisher from Maré, also observed that: "We will no longer have the greenery we have. Because of the contamination we can already see our mangrove suffering."

As home to many of the bay's remaining mangroves, the Guapimirim reserve is of critical importance for the entire ecosystem of the bay. Outside of the reserve, mangrove deterioration is also a great concern in the east of the bay. In the community of São Gonçalo, an artisanal fisher reported that "the mangrove is also crying for help. If you go to the mangrove, there's only garbage and waste... The animal species are dying; we don't have the same number of fish that we used to have".[497]

Traditional fishing communities are undertaking their own initiatives to restore, clean and preserve the mangroves.[498] An artisanal fisher and community organizer from Tubiacanga explained: "In 2015, our land was like an empty land that was burned. I [won] a grant... to have the fishermen plant mangroves. Today, our mangroves are a living forest. Four kilometres of mangroves... The fishermen cleaned everything, and then they replanted... But the grant is over, so the blocking [environmental protection] is also over. And [now] in that forest you see the waste."[499]



G) SAFETY AND SECURITY CONCERNS

In addition to the heightened safety risks faced by environmental human rights defenders in Brazil, insecurity is endemic in Rio de Janeiro and prevails in different areas of Guanabara Bay. Governance issues, drug trafficking and conflict between private militias create security risks and limit open and transparent environmental monitoring.[500] Discussing a ship cemetery identified by INEA, Adriana Teixeira told Amnesty International: "We weren't able to access this area because of insecurity. It's weird for people to believe that we're the state [authorities] and yet can't access certain areas because of crime. It's normalized here."[501]

Several journalists whom Amnesty International interviewed emphasized that artisanal fishers and other lower-income groups who live around the bay are disproportionately affected by insecurity. Brazilian journalist Carlos Tautz explained:[502]

> **"Pollution is a huge issue, but there's also a major problem of insecurity, affecting water and surroundings of the bay. There's a division of legal versus illegal powers at play. Fishermen, workers who live around the bay face a big security problem. The bay is divided into areas controlled by drug dealers, militias and armed forces. Insecurity is an issue as big as, if not bigger than, pollution. These problems are combined as oil companies use private security forces."**

Throughout the fact-finding carried out in Rio de Janeiro, Amnesty International's research team repeatedly met invisible borders and had to design careful mitigation strategies to minimize security risks for participants in this work.

Several artisanal fishers who have been defending publicly the rights of their fishing community told Amnesty International that they had experienced both in-person and online harassment because of their campaigning and organizing activities. As a result, many did not feel safe to speak about the oil and gas industry's impact on their territory and livelihoods. An artisanal fisher from Maré told Amnesty International: "We're afraid, you can see Alexandre [Anderson de Souza], he has to be escorted by the police, some people from his family have been killed, so we're afraid.

Our boats are small, low speed, [and] they have large vessels with speed. If they catch us one night, it's very complicated… When we talk about pollution, there's someone causing pollution, so if the polluter gets upset, we are small."[503]

An artisanal fisher from Maré said: "We cannot get close when [spills] happen, and if we do get close, and film, they might retaliate… I'm afraid of these people, they have a lot of influence, they may come and harm my family. People from the companies, they've threatened us, but sometimes they threaten us with ships passing over our boats."[504]

Several artisanal fishers said they found greater strength and safety when speaking collectively. Alexandre Anderson explained: "Since last year, we've been working as a network to reduce threats. AHOMAR doesn't sign anything alone, we have quilombolas and farmers who work with us, this is a way not to be targeted individually. We were able to reduce threats."[505]

H) FUTURE OF GUANABARA BAY

For artisanal fishing communities, the fossil fuel industry is causing irreversible and long-lasting harm in Guanabara Bay. These changes seem to weigh particularly heavily on younger generations. Brazilian journalist Emanuel Alencar explained: "The lack of perspective for young people is very serious. They don't have perspective for the future, so they don't care if they die today or tomorrow. That became very evident in my dialogue with fishers. [There is] discontinuity with younger generations. To have the bay only working towards oil and gas is very bad."[506] For Cleonice Puggian, associate professor at UERJ: "Youth have difficulty visualizing a future without [the fossil fuel industry] being there, they are so used to having the refinery there that there is a question of whether they would be able to think of a future without one."[507]



Artisanal fishing boats docked under a busy highway in the neighbourhood of Maré in Rio de Janeiro (Brazil), February 2025 © Amnesty International (photographer: Matias Maxx)

An artisanal fisher and community organizer from Tubicanga who runs several youth programmes told Amnesty International: "Through my association, I have purchased 18 computers to attract the youth, so that the children can learn Windows, MS Word, Excel, so they can have the basics for other work. And we teach them to build a boat and to make a net. But they don't feel motivated because they see what is happening with their parents and they feel bad about this."[508] An artisanal fisher from São Gonçalo simply said: "Artisanal fishing traditions are coming to an end."[509]

All the younger artisanal fishers to whom Amnesty International spoke had other occupations and treated artisanal fishing as recreational or a marginal source of supplemental income. One of them shared that: "if there are no changes or improvements to the bay, artisanal fishers will come to an end, because you're not going to lead your children to a profession that is coming to an end."[510]

I) CONCLUSION

Mitigation. As one of the largest oil and gas producers in the world, Brazil's failure to meaningfully transition away from fossil fuel exploration and production breaches both Brazil's conventional and customary obligations pertaining to the protection of the climate system and human rights.

Right to a healthy environment. Amnesty International spoke to more than 30 artisanal fishers who live and fish across various parts of the bay. They all expressed overwhelming concern about continued oil spills and the impacts of such pollution on the health of the water, fish, mangroves and people. Many also described losing access to the key fishing areas and disturbance to the marine ecosystem. The compounded effects of pollution and economic marginalization have turned Guanabara Bay into a sacrifice zone, violating artisanal fishing communities' rights to a clean, healthy and sustainable environment.

Environmental human rights defenders. Several environmental human rights defenders interviewed by Amnesty International in Guanabara Bay reported fearing for their safety, with some experiencing both in-person and online intimidation and harassment. Several complained about the limitations of Brazil's national protection programme, which falls short of Brazil's heightened protection obligation.

Corporate accountability and the 'polluter pays' principle. Local, state and federal authorities in Guanabara Bay lack adequate means to proactively monitor the health and environmental impacts of the fossil fuel industry operating across the bay. Furthermore, the recent adoption of the so-called "Devastation Bill" put Brazil on a path of environmental deregulation, in breach of Brazil's duty to regulate the activities of the fossil fuel industry, particularly state-owned companies with the size and market share of Petrobras.

Since its establishment in Guanabara Bay, the activities of Petrobras and its subsidiary Transpetro have contributed to environmental pollution and degradation throughout the bay. In line with its responsibility to respect human rights, the state-owned company should investigate and remediate all the adverse human rights effects to which its onshore and offshore operations have contributed, particularly its impacts on artisanal fishers and other traditional communities relying on Guanabara Bay's watershed.

Right to effective remedy. Many artisanal fishers have not received compensation for either historical or continuing harm – including threats to their cultural practices – associated with the obstructing and polluting activities of the oil and gas industry, violating their right to remedy.

2. Canada: Wet'suwet'en land defenders protect the Yin'tah against Coastal GasLink

A) BACKGROUND

(1) Fossil fuel industry in Canada

The government of Canada self-describes as "a leader in oil and gas production, being the world's fourth largest producer of crude oil, and fifth largest producer of natural gas."[511] In 2023, oil and gas extraction was Canada's largest area of capital expenditure in the energy sector (CAD 39.2 billion, or USD 28.4 billion). In 2023, energy exports worth CAD 199.1 billion were sent to 123 countries, with the USA accounting for 89%.[512]

Despite active opposition from Canadian environmental and climate justice organizations, the government of Canada continues to heavily subsidize the fossil fuel industry. In 2023, it provided at least CAD 18.5 billion (USD 13.4 billion) in public (taxpayer funded) financial support to fossil fuel and petrochemical companies.[513] In 2025, according to the Canadian Association of Petroleum Producers, the oil and gas industry was projected to generate CAD 172.4 billion (USD 125 billion) in revenue and the sector paid more than CAD 20 billion in royalties to provincial governments in both 2024 and 2025.[514]

In recent years, Canada has increased its investment in fossil gas projects, embracing the fossil fuel industry's misleading narrative that so-called 'natural' gas is a clean transition fuel.[515] Canada is currently home to seven fossil gas export projects, all currently located in the province of British Columbia (BC).[516] According to the BC Energy Regulator (BCER), fossil gas that is produced across BC supports:

(i) Increased access of northern communities to LNG;

(ii) "Diesel reduction";

(iii) Balancing out seasonal energy demands;

(iv) Export revenues.[517]

Most fossil gas resources in BC lie in the northeast region of the province; many on, or near, Indigenous territories including reserves, treaty and traditional territories.[518]

The Canadian energy infrastructure company TC Energy Corporation (TC Energy) is the operator and partial owner of the Coastal GasLink (CGL) pipeline. It boasts that its infrastructure "supports global LNG demand", and that "[d]emand for LNG feedstock [raw LNG] is set to triple over the next decade".[519]

Despite evidence to the contrary (see section 8D(2)(a) above), Coastal GasLink Pipeline Ltd. – operator of the CGL pipeline – argues that "LNG is… a cleaner-burning, reliable, lower-carbon fuel, and safer to transport when compared to other fossil fuels".[520] It specifically told Amnesty International that it is "delivering Canadian natural gas to LNG facilities, answering the call for cleaner, reliable energy from Canada's allies and helping displace higher-emission fuels such as coal in a world that is hungry for energy and accelerated electrification."[521]

(2) Colonial governance and Indigenous Peoples' rights

Since colonization, Indigenous Peoples in Canada have been subjected to racist and lethal government policies designed to eliminate Indigenous culture and oppress Indigenous Peoples, including the criminalization of Indigenous governance structures and cultural practices, the forced relocation of Indigenous Peoples from their traditional territories and families and attempts to force their assimilation into white settler society.[522] These policies and practices, which are discussed below, have been carried out through forced evictions, relocations and dispossession, mandatory residential schools for assimilation, Indian registration rules, mass incarceration, forced sterilization, and the Sixties Scoop (forced removal of Indigenous children from their families), among others.[523] In 2015, the Truth and Reconciliation Commission of Canada (TRC) found that: "For over a century, the central goals of Canada's Aboriginal policy were to eliminate Aboriginal governments; ignore Aboriginal rights; terminate the Treaties; and, through a process of assimilation, cause Aboriginal peoples to cease to exist as distinct legal, social, cultural, religious, and racial entities in Canada."[524]

In 1876, the Canadian government passed the Indian Act which aimed to dispossess Indigenous Peoples from their territories and assimilate them into settler society.[525] The provisions of the Act narrowly define and heavily regulate Indigenous governance structures, land rights, succession rules, political organization and economic opportunities.[526]

Despite changes to the Indian Act over time, its implementation has scarred generations, separated families and prevented the transmission of cultural practices and legacies. It led to the establishment of 139 residential schools, forcibly attended by 150,000 Indigenous children, which the TRC described as a "systematic, government-sponsored attempt to destroy Aboriginal cultures and languages and to assimilate Aboriginal peoples so that they no longer existed as distinct peoples."[527] The residential schools constituted institutionalized and systemic abuse of Indigenous children. The TRC estimates that at least 3,213 children died while attending residential schools; however, the true number may be much higher.[528]

Residential schools left their mark on generations of Indigenous children who were forcibly removed from their families and subjected to physical and sexual abuse, scientific experimentation, malnutrition and inadequate academic

training.[529] The schools also caused profound harm to the children's families and Indigenous Nations as a whole. On their return home, many children could no longer speak their own language, breaking off communication with their loved ones and creating intergenerational traumas that are still felt today.[530]

In 1951, changes to the Indian Act gave the provinces jurisdiction over Indigenous child welfare. State authorities subsequently engaged in large-scale forced removal of Indigenous children from their families, homes and communities, and their placement with child welfare services and adoption into predominately white settler, non-Indigenous families without any measures to preserve their culture and identity, referred to as the "Sixties Scoop".[531] The colonial legacy of institutionalized racism continues through government programmes that remove Indigenous children from their families and communities at high rates. During his March 2023 visit to Canada, the UN Special Rapporteur on the rights of Indigenous Peoples observed: "The forced removal of Indigenous children from their families continues, as children are placed in foster care or adopted, often off-reserve, reproducing the negative impacts of residential schools."[532]

Members of the Wet'suwet'en Nation shared with Amnesty International the impacts that residential schools and the Sixties Scoop had on their families, which resulted in them growing up disconnected from their culture and traditional way of life, far away from their ancestral territory. "Colonization is erasing us and keeping us away from our land," said Skiy ze' Dr. Karla Tait, an Unist'ot'en land defender, clinical psychologist and Director of Programming for the Unist'ot'en Healing Centre. "Unfortunately, the vast majority of our community members don't know the traditional practices. They don't know the territory boundaries. They don't know how to navigate the territory."[533]

Tsakë ze' Sleydo',[534] a Wing Chief (Cas Yikh house) of the Gidimt'en Clan, explained: "The residential schools and Sixties Scoop are designed to get rid of the 'Indian problem'. For the people that didn't die in residential schools, a lot of them have died outside because of the impacts, because of that disconnection from the land. Same with the Sixties Scoop. Half of my mom's siblings aren't alive anymore because they went to residential school or because they were part of the Sixties Scoop, and they couldn't survive the aftermath of that. The intergenerational impact is that people have grown up disconnected from their families, from their communities, from their Nation and from their land. Those people are lost in the world; they don't know where they belong, they don't have that connection. We're still feeling the effects of that. We're also still trying to heal from the intergenerational trauma and the collective trauma that has come out of those systems."[535]

CANADIAN LAW

The rights of Indigenous Peoples are currently protected in Canadian legislation in several ways. Section 35 of the Constitution Act 1982 states that "the existing Aboriginal and treaty rights of the Aboriginal Peoples of Canada are hereby recognized and affirmed."[536] In November 2019, the Government of British Columbia passed the Declaration on the Rights of Indigenous Peoples Act, requiring the province to ensure its laws are consistent with UNDRIP.[537]

On 21 June 2021, the federal government passed the United Nations Declaration on the Rights of Indigenous Peoples Act, which requires Canada to harmonize its legislation, including the Indian Act, with UNDRIP.[538] On 21 June 2023, the Government of Canada released the UN Declaration Act Action Plan to implement the UNDRIP domestically.[539]



(3) Canada's insufficient mitigation goals

In February 2025, Canada submitted a new nationally determined contribution (NDC) to the UNFCCC Secretariat.[540] While the country's efforts to comply with the requirements of the Paris Agreement were celebrated by civil society, many organizations found that Canada's new mitigation goals fell short of its heightened responsibility to urgently and equitably phase out fossil fuels as a high-income, historically high GHG emitter.[541]

To date, Canada has committed to achieving net zero by 2050, despite calls for an earlier decarbonization. The country's latest NDC sets a moderate target of GHG emissions reduction of 45% to 50% by 2035,[542] falling short of

the objective of 80% below 2005 levels put forth by climate justice organizations.[543] Furthermore, while Canada's NDC responds to the outcomes of the Paris Agreement's first global stocktake, it lacks targets for all sectors of the Canadian economy.[544]

Finally, while Canada recognized that Indigenous Peoples are at the forefront of the climate crisis, its latest NDC did not articulate clear pathways to engage with Indigenous knowledge, failing to meaningfully integrate the perspective of First Nations, Inuit and Métis in climate policy-making.[545]

(4) Roll-back of environmental protection

On 26 June 2025, the Canadian government passed the Building Canada Act (Bill C-5) which encourages the fast-tracking of infrastructure projects without safeguarding Indigenous Peoples' right to free, prior and informed consent (FPIC) over development proposals that affect their territories.[546] The legislation gives Cabinet the power to designate projects such as ports, pipelines and dams as being in the "national interest", allowing them to speed through or bypass environmental and consultation regulatory processes.[547] Indigenous leaders have condemned the bill and said the government failed to adequately consult Indigenous Peoples on its development.[548]

In August 2025 the Major Projects Office was created as part of the Act. Its mandate is to "get nation-building projects built faster" by "streamlining and accelerating regulatory approval processes… [and] helping to structure and co-ordinate financing of these projects."[549] In September, the government designated LNG Canada Phase II – the export facility to which the CGL pipeline transports fossil gas – as one of the first "national interest projects" prioritized under the Building Canada Act.[550]

The Building Canada Act reflects a trend that has been seen in a series of bills across Canada that invoke economic urgency to justify curtailing environmental protections, consultation with Indigenous Peoples, and human rights protection.[551]

B) METHODOLOGY

In April 2025, a team of researchers from Amnesty International and Columbia Law School travelled to Smithers, BC, to meet with members and representatives of the Wet'suwet'en Nation. Researchers carried out individual and group interviews with 15 members of the Nation, two land defenders from other Indigenous Nations in Canada, one supporter of the Nation and two academics.

Amnesty International has been accompanying members of the Wet'suwet'en Nation since 2022. The present study builds on research undertaken in 2023. In conducting this research, Amnesty International followed an Indigenous-led methodology grounded in respect for Wet'suwet'en protocols and ways of knowing. The research proposal was reviewed in consultation with members of the Nation, and guidance was sought on the ways interviews should be conducted. The team of researchers sat in circle with members of the Nation, taking time to build relationships and listen deeply, recognizing that trust and reciprocity are an essential part of the research process. This approach ensured that the process was guided by Wet'suwet'en voices and priorities, rather than imposed from outside, and reflects Amnesty International's commitment to decolonial research principles.

During the interview process, Amnesty International researchers worked with people to identify key locations on maps and understand changes to the territory caused by past and planned construction of the pipeline and adjacent infrastructure. Some information about the location of key cultural practices or natural assets was corroborated by Amnesty International but will not be published in detail to protect the Wet'suwet'en Nation's data sovereignty.

Researchers also spoke to two civil society representatives and two academics. Amnesty International requested meetings with the BC Environmental Assessment Office (BC EAO) but did not receive any answer.

Researchers carried out an extensive review of documentary evidence including environmental impact assessments, permit applications to and from the BC EAO and BC Energy Regulator (BCER), secondary literature on the mechanics, health and environmental impacts of compressor stations, publicly available information regarding CGL and LNG Canada, news clips, and reports from many Indigenous and non-Indigenous CSOs. Researchers also reviewed satellite imagery of key locations to determine construction timelines and corroborate information from interviews.

Amnesty International shared its findings and addressed a series of questions to Coastal GasLink, Kohlberg Kravis Roberts & Co, (KKR), Alberta Investment Management Corporation (AIMCo) and TC Energy inbetween September

and October 2025. Amnesty International also addressed right of reply letters to the Premier of British Columbia and the Prime Minister of Canada in September 2025. CGL replied to Amnesty International in October 2025 both "as the developer and operator" of the CGL pipeline and on behalf of its partners KKR, AIMCo and TC Energy.[552] Amnesty International reflected their response in this report.

Researchers were honoured to be invited to spend time on the Yin'tah (the Wet'suwet'en Nation's ancestral, unceded territory) and carried out site visits of sections of the pipeline and areas that CGL has cleared to make way for the two compressor stations planned in Parrott Lakes and Titanium Peak.

C) THE WET'SUWET'EN NATION AND THE COASTAL GASLINK PIPELINE

(1) The Wet'suwet'en Nation

"When we rise up to defend the Yin'tah, we are criminalized. Civil injunctions are a colonial legal weapon that has become a mechanism for the militarization of our community, criminalization of our People, and for companies to carry out destructive extraction without Indigenous consent. The ongoing criminalization of Wet'suwet'en People is not the way to reconciliation."

Wet'suwet'en land defenders[553]

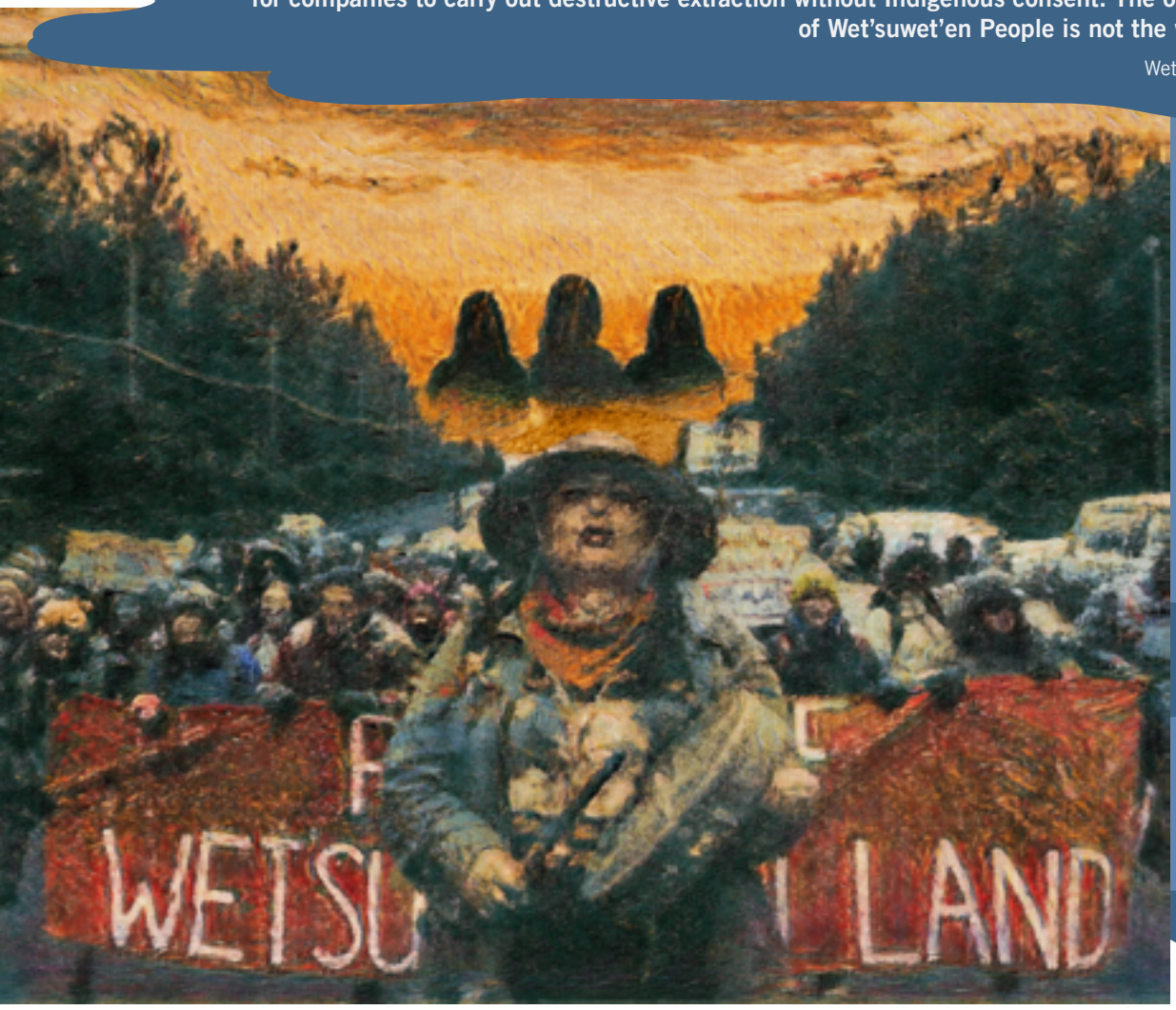


Illustration of the Wet'suwet'en Nation's frontline produced for Amnesty International, 2023 © Tercer Piso/ Amnesty International

The Wet'suwet'en Nation has more than 5,000 individual members organized in five clans: Gil_seyhu (Big Frog), Laksilyu (Small Frog), Gidimt'en (Wolf/Bear), Likhts'amisyu (Fireweed) and Tsayu (Beaver) which span across the Nation's 22,000km^2 territory.[554] These clans comprise 13 matrilineal house groups.[555] Each house group is represented by a House Chief (supported by Wing Chiefs) and the various House Chiefs within a clan collectively represent the entire clan.[556] Under 'Anuc niwh'it'en (Wet'suwet'en law), each clan has the responsibility and authority to control access to their territories.[557] Wet'suwet'en decision-making requires the collective House Group Chiefs to discuss important matters and come to consensus. All decisions are made through and ratified in baht'lats (a feast system).[558] The Chiefs use the authority vested in them in the feast hall to settle disputes and breaches of Wet'suwet'en law.[559] Despite past concerted and systematic efforts by the Canadian government and its agents to

displace the feast from the life of Wet'suwet'en Peoples, today the feast system remains a central part of Wet'suwet'en governance, social structure and worldview.[560]

The Yin'tah is central to the Nation's identity, worldview, way of life and culture.[561] Dinï ze' Woos, a Wet'suwet'en Hereditary Chief, told Amnesty International that, for the Wet'suwet'en, being on the land is how they speak their language and maintain their culture because both are intrinsically connected to the surrounding environment.[562] Members of the Wet'suwet'en Nation describe their ancestral territory, the Yin'tah, as a vital source of cultural continuity, where being on the land strengthens connections to their ancestors and sustains the passing of knowledge and skills, such as harvesting, berry picking, trapping, fishing, hunting, and gathering medicinal plants, across generations.[563] This deep relationship with the land not only preserves traditional practices but also fosters personal healing, helping individuals to mend family relationships, recover from substance abuse, and overcome the ongoing impacts of colonialism.[564]

"In Wet'suwet'en, the word for the land is Yin'tah. Yin'tah incorporates not only the physical environment, animals, plants, water, geography, but the human world as well. Yin'tah understands all parts of the territories as interconnected and related to a greater whole. If the physical territories are harmed, then the Wet'suwet'en social world is harmed as well."[565]



Members of the Wet'suwet'en Nation told Amnesty International that the Yin'tah is essential for their survival as an Indigenous People.[566] Tsakë ze' Hagwil'awh (Antoinette Gagnon), a member of the Likhts'amisyu clan, stated: "Without land, without the territorial base, you can't sustain a people. My understanding of our leadership has always been that they have to be the protectors. They have to ensure the that the land remains intact and is actually able to sustain people… [The land is] what must be passed on to every new generation."[567]



The Wet'suwet'en Nation's Yin'tah, June 2024 © Amnesty International (photographer: Alli McCracken)

"As an Unist'ot'en woman, who comes from a matrilineal people, it is so essential to preserve the integrity of our land to provide for our future generations," said Skiy ze' Dr. Karla Tait. "I don't think we can allow anyone to run us off our territory and erase who we are… [Our] identity is entirely wrapped up in our day-to-day practices, in our spiritual connection to the land, in our knowing of that land. Our survival as a people depends on that connection. Our resistance to [the CGL pipeline] project is our existence here."[568]

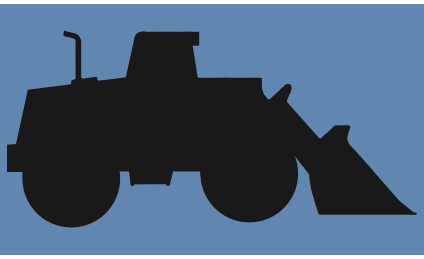
The Wet'suwet'en have never sold, surrendered or in any way relinquished their collective title to their territories.[569] The Wet'suwet'en Hereditary Chiefs – the ancestral authorities of the Nation according to Wet'suwet'en law and as affirmed by the Supreme Court of Canada's Delgamuukw-Gisday'wa decision – have had continuous authority over the Yin'tah since time immemorial.[570] The Office of the Wet'suwet'en is the administrative arm of the Hereditary Chiefs.[571] There are also five Wet'suwet'en Indian Act bands: Witset First Nation, Wet'suwet'en First Nation, Hagwilget Village Council, Ts'il Kaz Koh First Nation, Skin Tyee Band and Nee Tahi Buhn Band.[572] Bands were created by the Indian Act and are governed by elected band councils, whose authority is limited to on-reserve matters.[573]

The Wet'suwet'en Nation has never signed a formal treaty with the Crown. On 24 May 2020, the Wet'suwet'en Hereditary Chiefs signed a memorandum of understanding with the governments of Canada and BC, recognizing Wet'suwet'en Aboriginal rights and title throughout the Yin'tah and that these rights and title are held by Wet'suwet'en Houses under their system of governance.[574]

According to Wet'suwet'en land defenders, "the Wet'suwet'en struggle is a frontline to protect the inherent rights of Indigenous Peoples and to prevent climate change".[575] For more than a decade, Wet'suwet'en land defenders have been constructing what they refer to as "re-occupation sites" across the Yin'tah as a way of re-affirming their authority over it, as well as to protect it from environmentally destructive projects and industries.[576] These sites are populated by Wet'suwet'en families, elders and children, and include residential cabins, pit houses, bunkhouses, healing lodges, a feast hall, and hunting and cultural camps.[577]



(2) The Wet'suwet'en Nation's defence of the Yin'tah against the Coastal GasLink pipeline



"What I see with Coastal GasLink… is a project that is at the end of an era. Global markets are forecasted to peak within five years, if not sooner. It's an extreme form of energy that I don't think will be profitable for much longer. The only way to make it work is to invade and permanently degrade one of the most special places on the planet."

Kai Nagata, Communications Director at Dogwood[578]

The Wet'suwet'en Nation, under the governance of its Hereditary Chiefs, is defending the Yin'tah against the construction of the CGL pipeline. The pipeline, owned by Coastal GasLink Pipeline Ltd., TC Energy Corporation (formerly TransCanada), Kohlberg Kravis Roberts & Co (KKR) and Alberta Investment Management Corporation (AIMCo) is intended to transport fossil gas extracted from the Dawson Creek area of BC to an LNG export facility near Kitimat, BC, to be exported to Asia.[579] The Kitimat facility, which is currently under construction, is owned by LNG Canada, a joint venture comprising five carbon majors – Shell, PETRONAS, PetroChina, Mitsubishi Corporation and KOGAS.[580] According to CGL, "[i]n March 2022, TC Energy announced the signing of option agreements to sell up to a 10 per cent equity interest in Coastal GasLink LP to Indigenous communities across the project corridor, from [its] current 35 per cent equity ownership."[581]

In 2012, LNG Canada selected TC Energy Corporation to design, build and operate the CGL pipeline. In 2016, the BC Oil and Gas Commission (now BCER) approved the final permits for the pipeline project.[582] The 670km-long pipeline passes through the territories of more than 30 Indigenous communities, including some 190km through Wet'suwet'en territory.[583] Construction of the pipeline was completed in November 2023.[584]



Construction of the Coastal GasLink pipeline in June 2023 © Amnesty International (photographer: Alli McCracken)

Wet'suwet'en territory contains an old-growth watershed – an ancient ecosystem more than 150km^2 in size – called Caas Tl'aat Twah, which is home to numerous flora and fauna. The watershed is a traditional and ongoing salmon harvesting site and, as of 2024, has never been logged or mined.[585] The pipeline cuts across "endangered caribou habitat, sensitive salmon ecosystems and Indigenous hunting, fishing and harvesting areas."[586]

All five Wet'suwet'en clans oppose the construction and operation of the CGL pipeline.[587] The Wet'suwet'en Hereditary Chiefs, on behalf of their clans, have never provided their FPIC for the pipeline project.[588]

"The Wet'suwet'en are stewards of the land. They are here to protect their traditional territories and to ensure that future generations of Wet'suwet'en are able to live and benefit from all that their ancestral land provides. The Wet'suwet'en are not opposed to commercial and economic development on their traditional territories as long as the proper cultural protocol is followed, and respect given. The Wet'suwet'en insist that every effort is made to ensure the protection of their traditional territories from environmental damage."

Office of the Wet'suwet'en[589]

Throughout the environmental assessment certificate consultation process, CGL signed "community and project agreements" with 20 Indian Act band councils whose reserves are located along the pipeline route, including five Wet'suwet'en band councils (Wet'suwet'en First Nation, Skin Tyee Band, Witset First Nation, Ts'il Kaz Koh First Nation and Nee Tahi Buhn Band).[590]

CGL claims that it has project agreements in place "with all 20 elected Indigenous groups along the project corridor, including Wet'suwet'en communities."[591] According to the operator, "these agreements were achieved through extensive consultation and engagement, unique to each Nation's expectations, interests and values. They are the result of collaboration, where we worked together to identify a path towards mutually beneficial relationships."[592] It also indicated that it "has consistently sought and continues to engage with Indigenous communities including Wet'suwet'en Hereditary Chiefs to build understanding and to seek common ground."[593]

The operator further claims that "[r]especting human rights is a fundamental operating principle of TC Energy and its partners, and by extension, how we planned and built the Coastal GasLink Project. At Coastal GasLink, we have placed our respect and deep commitment to collaboration with Indigenous and local communities at the forefront of all that we do. This commitment started more than ten years ago, when we openly and respectfully approached more than 20 Indigenous groups along our then proposed project corridor in accordance with Canadian law, and consistent with the spirit and intent of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and its guiding principles."[594]

However, past research by Amnesty International has determined that the consultation process for the CGL pipeline did not meet the criteria developed by international human rights law and standards, breaching the Wet'suwet'en Hereditary Chiefs and their clans' collective right to consultation in order to obtain their FPIC, as well as their right to self-determination.[595] A revision of pipeline project documents and consultation reports prepared by CGL indicates that the company's consultation framework emphasized relationship-building, mitigation measures and economic benefits for Indigenous Peoples, rather than securing their FPIC.[596] CGL's own consultation plans focused on project-specific goals, including construction and operations, and set out engagement activities such as discussing mitigation measures, developing a construction monitoring programme and promoting Indigenous contracting opportunities.[597] None of the documents reviewed by Amnesty International identify FPIC as the objective of the consultation process.[598]

According to international law and standards, Indigenous Peoples are entitled to give or withhold their consent to project proposals that affect them.[599] Indigenous Peoples should be consulted through their own representative institutions and in accordance with their own procedures.[600] The Hereditary Chiefs have authority over the entire Yin'tah, including the areas through which the CGL pipeline passes, whereas Indian Act band councils have authority only over the reserves they were elected to govern – the pipeline does not pass through any Wet'suwet'en Indian Act reserves.[601] While CGL has signed project agreements with five Wet'suwet'en Indian Act band councils (whose reserves are located along the pipeline route), it has not obtained FPIC from the Wet'suwet'en Hereditary Chiefs who have authority over the portions of the Yin'tah that the pipeline passes through. Nevertheless, construction and operation of the pipeline has proceeded.

Moreover, as per FPIC, the Hereditary Chiefs require any visitors to the territory to seek their permission to enter.[602] CGL has never received consent to operate on Wet'suwet'en territory. In February 2019, Wet'suwet'en Hereditary Chiefs called for a stop work order on the pipeline. They issued eviction notices to CGL in January 2020 and reaffirmed the eviction in November 2021.[603]

In December 2019, the British Columbia Supreme Court (BCSC) granted CGL an interlocutory injunction which prevents We'suwet'en land defenders and their supporters from blockading the Morice Forest Service Road to attempt to stop pipeline construction in Wet'suwet'en territory.[604] CGL claims that, "[d]uring construction, [it] obtained an interlocutory injunction for the safety and security of its workforce."[605] The injunction includes enforcement provisions under which land defenders can be arrested for approaching pipeline construction sites and blockading the road, even though these sites are located on Wet'suwet'en territory.[606] Amnesty International has determined that the terms of the injunction order are overly broad in scope and impact, disproportionately restricting the rights of members of the Wet'suwet'en Nation to self-determination, as well as their human rights to freedom of peaceful assembly and freedom of movement because the injunction aims to prevent their legitimate actions to defend their territory.[607] Moreover, the injunction has permitted CGL to proceed with construction of the pipeline without adequate consultation and without the FPIC of the Wet'suwet'en Hereditary Chiefs and their clans. As of September 2025, the injunction remains in place.

CGL claims that "[r]especting human rights is a fundamental operating principle of TC Energy and its partners, and by extension, how [CGL] planned and built the Coastal GasLink Project… and TC Energy complies with the laws of the jurisdictions within which we operate."[608] However, Amnesty International's research has revealed how, operating under the injunction, the Royal Canadian Mounted Police (RCMP), its Critical Response Unit and CGL's private security firm, Forsythe Security, have intimidated, harassed and unlawfully surveilled Wet'suwet'en land defenders.[609] The pipeline project has fundamentally altered Wet'suwet'en territory and the Nation's way of life. During Phase I of construction of the pipeline, the significant police and private security presence resulted in a profound imposition of unlawful surveillance and control over the daily lives of land defenders who were regularly followed, filmed and photographed by the RCMP and Forsythe Security.[610] Wet'suwet'en women land defenders experienced threats and acts of gender-based discrimination and violence committed against them by the RCMP, Forsythe Security and CGL employees.[611]



Illustration of Wet'suwet'en land defender Tsakë ze' Howilhkat (Freda Huson) arrested by the RCMP at the Unist'ot'en Healing Centre in February 2020, produced for Amnesty International in 2023. © Tercer Piso/ Amnesty International

From January 2019 to March 2023, the RCMP undertook four large-scale police operations against Wet'suwet'en land defenders and their supporters on Wet'suwet'en territory as a way of enforcing the injunction.[612] During these raids, the RCMP were equipped with semi-automatic weapons, helicopters and dog units.[613] More than 75 land defenders were arbitrarily arrested and detained, solely for exercising their Indigenous rights and their rights to freedom of expression and peaceful assembly.[614]

(3) Criminalization of Wet'suwet'en land defenders and their allies

In June and July 2022, the BC Prosecution Service decided to prosecute 20 land defenders with criminal contempt for allegedly disobeying the injunction order to stay away from pipeline construction sites.[615] Seven out of the 20 land defenders pled guilty in December 2022 because of the psychological and financial harm caused by the criminal process and because they wished to terminate the imposition of onerous bail conditions prohibiting them from being on Wet'suwet'en territory and participating in any other frontline resistance against extractive projects across Canada.[616] Five others had the charges against them dropped.[617]

Several land defenders went on trial in 2023 and 2024. In November 2023, land defender Sabina Dennis was found not guilty of criminal contempt.[618] In February 2024, Dinï ze' Dsta'hyl, a Likhts'amisyu Wing Chief, was found guilty of criminal contempt for violating the terms of the injunction order.[619] He was sentenced to 60 days' house arrest which he served in July and August 2024.[620] Amnesty International recognized him as Canada's first prisoner of conscience following the sentence.[621]

In January 2024, land defenders Sleydo', Shaylynn Sampson (a Gitxsan woman with Wet'suwet'en family connections) and Corey (Jayohcee) Jocko (a Kanien'kehá:ka (Mohawk) were found guilty of criminal contempt for allegedly breaching the terms of the injunction order.[622] The land defenders had simultaneously filed abuse of process applications alleging that their human rights were violated by the RCMP during their arrests in November 2021.[623] On 18 February 2025 the BCSC ruled that the conduct of RCMP officers during the arrests, including anti-Indigenous racist statements, violated the land defenders' rights under the Canadian Charter of Rights and Freedoms.[624] However, the court failed to stay all charges against the defenders and said it would instead consider reduced sentences.[625] On 17 October 2025, the BCSC sentenced Sleydo' to 17 days in jail, Corey Jocko to 12 days and Shaylynn Sampson to nine days, but suspended the implementation of those sentences and ordered the defenders to complete 150 hours of community service each.[626]

(4) CGL Phase II

On 19 November 2024, CGL announced the pipeline had achieved "commercial in-service" status,[627] meaning that it was fully operational and able to charge tolls for gas transport. At the end of 2024, CGL estimated that "machine and final clean-up are complete, but there is still work to be done to uphold our commitment of returning the right-of-way to as close to its original state as possible."[628] In June 2025, CGL publicly celebrated its contribution to Canada's first LNG export.[629]

> **"There is an unpaid bill. There are quantifiable damages to Wet'suwet'en people, to territory, to lifeways. Until that is paid, it is poor form to push forward phase two and cause more damage. The province needs to rectify what it has already broken."[630]**
>
> Kai Nagata, Communications Director at Dogwood

At the time of publication in November 2025, CGL's pipeline is currently operating with a single compressor station – the Wilde Lake Compressor Station – at the start of the pipeline near Dawson Creek, BC. As part of so-called Phase II, CGL plans to build six additional compressors to double the capacity of the pipeline.[631] Two of these compressors, known as Titanium Peak and Parrott Lakes, are planned on Wet'suwet'en territory and will each require between 0.2km^2 and 0.29km^2 of land.[632]

Map of Phase 2 of the Coastal GasLink pipeline © Coastal GasLink



Compressors are not essential for the pipeline's basic function; they are intended to increase gas capacity and, in turn, CGL's export capacity. CGL argues that "the project, including the potential to add incremental compression to move up to 5 Bcf/day [Billion cubic feet per day], was approved in accordance with applicable provincial and federal laws and regulations".[633] CGL expressly told Amnesty International that construction of the planned compressors "would be customer-driven and, should it proceed, would be carried out in accordance with the remaining governmental approvals and permits."[634]

For Wet'suwet'en land defenders and their allies, CGL's prioritization of profit-making cannot justify the foreseeable environmental, health and other human rights risks associated with the construction of new polluting infrastructure on their ancestral land, as well as the increased fossil fuel consumption associated with it.

(a) Features of compressor stations

The BC EAO's 2014 assessment report explains: "Compressor stations increase the pressure of, or compress, the natural gas, allowing it to move through the pipeline. They are placed at relatively even intervals along a pipeline to maintain consistent compression."[635] The report envisioned that the pipeline would eventually include "the installation of compressor stations at up to eight locations, each of which would include several 30–34 megawatt (MW) natural gas-powered compressor units and would require new permanent all-season access roads."[636]

CGL describes its production chain as follows:[637]

What is a compressor and meter station?

Compressor and meter facilities are important pieces of infrastructure for a natural gas pipeline system that ensure natural gas moves through the pipeline safely and efficiently.



In November 2017, CGL submitted an application to amend the BC EAO's environmental certificate proposing an alternate route for the pipeline and the relocation of one of the compressor stations from Goosly Falls to Parrott Lakes, in response to "feedback from First Nations related to avoiding or reducing potential adverse effects on culturally sensitive sites, and traditional and cultural use of a portion of the Certified Pipeline Corridor".[638] In May 2018 the BC EAO approved CGL's request.[639]

In March 2024, CGL submitted another application to amend its environmental certificate to allow for the "the potential future electrification of the compressor stations as options become available within the electric utility grid."[640] CGL claims that such conversion would require a new construction period of approximately 12 to 24 months, "with a peak workforce of up to 200 people" and "may increase the traffic associated with construction personnel, heavy equipment, and materials."[641]

DATE	LICENCE / PERMIT	STATUS OF LICENCE OR PERMIT
October 2014	CGL receives BC EAO's Environmental Assessment Certificate (No. E14-03)	
May 2018	BC EAO approves amendment to certificate E14-03 relocating the Goosly Falls compressor station to an alternate location at Parrott Lakes	Approved[642]
March 2024	CGL submits application to amend certificate E14-03 to propose future electrification of compressor stations to BC EAO[643]	Approved
November 2024	CGL submits construction permit application for Parrott Lakes compressor to BCER	Ready for decision
November 2024	CGL submits construction permit for Titanium Peak compressor to BCER	In review

CGL must obtain permits from BCER before it can proceed with the construction of compressors,[644] and told Amnesty International that such permitting "is underway."[645] Several Wet'suwet'en leaders complained about the lack of information the Nation has thus far received regarding the two compressors planned to encroach upon the Yin'tah. Dinï ze' Dsta'hyl told Amnesty International that "the secretiveness among the government and industry is so bloody crazy. Why all the secrecy, that's what I wonder! They can't give us maps! They can't tell us what their intentions are or nothing. They just go directly behind our back, get all the permits."[646]

(b) Parrott Lakes

According to the permit application CGL submitted to the BCER in September 2023 (and revised four times since), the Parrott Lakes compressor is "part of an expansion proposed to increase capacity of the Coastal GasLink Pipeline Project in order to meet requested incremental demand for the delivery of sweet natural gas to the west coast."[647]

In total, the permit application claims that the project will require a footprint of 28.75ha of land (approximately 0.29km^2), comprising a "permanent facility footprint of 17.13 ha and 11.62 ha of temporary workspace for use during construction". According to the permit application, CGL has already cleared 22.22ha (more than two-thirds of the project's footprint) and would need to clear another 8.53ha of land.

(c) Titanium Peak

According to the permit application submitted by CGL to the BCER in September 2023 (and revised three times since), the Titanium Peak compressor station is also part of Phase II, and will require a footprint of 19.18ha (approximately 0.19km^2) of land.[648] CGL has already cleared 15.97ha of land and will require 3.21ha of new cuts.[649]

At the time of its application, CGL was using this area as "a stockpile site and for worker accommodations in support of pipeline construction".[650] Once constructed, the site will comprise "two gas turbine driven compressor units and associated equipment, as well as an operations living quarters".[651]

To access the compressor, CGL is proposing to build 100m of new permanent access road to the southwest of the facility connected to the Shea Creek Forest Service Road.[652] The permit application states that construction will start by 31 December 2025.[653] At the time of publication, CGL's permit application was undergoing BCER review.

(d) Overview of environmental and health risks of compressor stations

The BC EAO's assessment report found that, while the adverse effects from pipeline construction would be short-term, the adverse effects of compressor stations "would persist for the life of the Project".[654] The Wet'suwet'en land defenders interviewed for this report all expressed concerns regarding the permanence of the negative health, environmental and safety impacts of compressors.

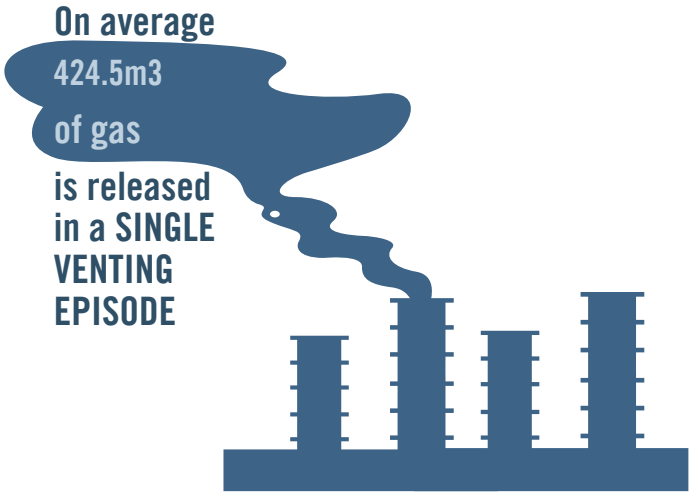
(i) Emissions and air pollution

The BC EAO's assessment report established that "the primary source of GHG emissions during operations would be from the combustion of natural gas to power compressor stations and transport natural gas through the pipeline."[655]

Across Canada in 2019, emissions resulting from pipeline transport – primarily related to combustion at compressor stations – were equivalent to 8.3 megatonnes of CO_2.[656]

The BC EAO's assessment report also states that "with regards to air quality, the primary source of air quality impacts would be the compressor stations during operations".[657]

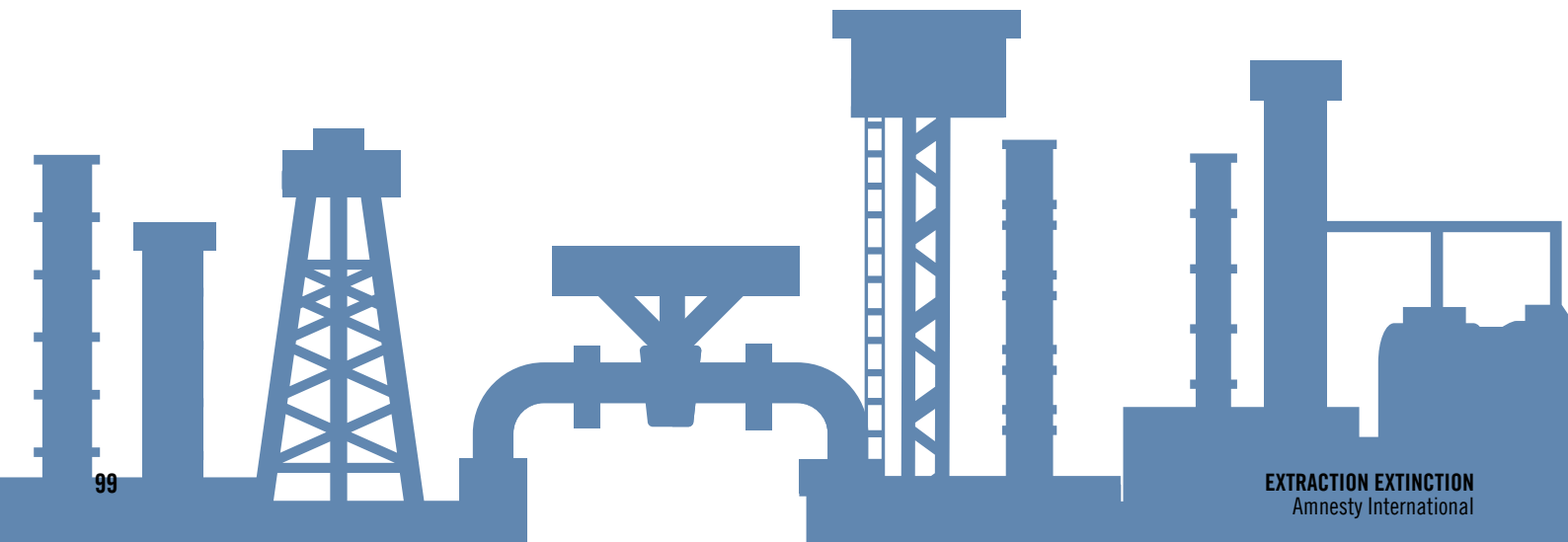
When a compressor releases gas into the air – a process called venting or blowdown – it is letting off unburned gas to reduce heat and pressure, putatively for reasons of safety and efficiency. On average, a single compressor venting episode releases about 424.5m³ of gas into the atmosphere.



At the proposed Titanium Peak compressor station, all the vents together would release 864.88m³ of gas per day.[658] For the Parrott Lakes compressor station, the daily total would be 490m³.[659]

To help mitigate these harmful impacts, the Pembina Institute – a Canadian energy think tank – has recommended minimizing non-routine venting – venting that entails flaring gas as a safety measure to reduce pressure – and prohibiting routine venting – that which is done to save money by burning off fossil gas – from most sources at new facilities.[660]

However, compressors do not only emit methane – a GHG 20 times more potent than CO_2 – during routine and non-routine venting, but also through leaks and incomplete combustion (methane slip). Compressors are already the single largest methane emissions source in BC.[661]



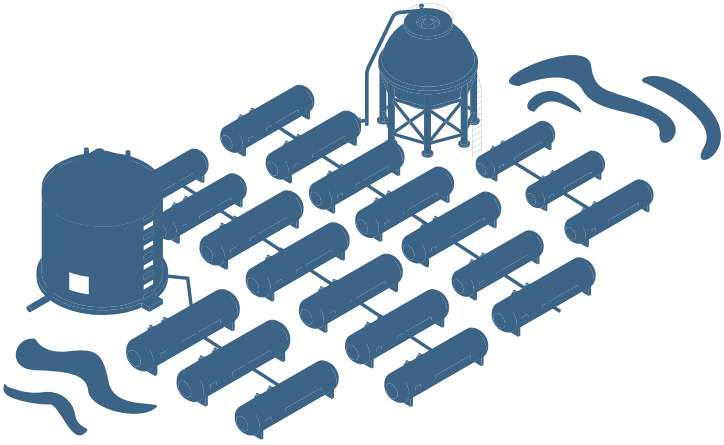
(ii) Construction, ongoing nuisance, noise and light pollution

The BC EAO's assessment report estimated that the construction of each compressor would be "less cyclical [that is, more constant] than pipeline construction with crew sizes of between 140 and 200 workers per compressor station, over an 18-to-20-month period."[662]

It also stated that roads to compressors would be permanent (while roads developed for construction would be decommissioned and reclaimed) and compressor facilities would be visited by CGL personnel weekly.[663]

As a result, the report concluded that: "Disturbance from permanent facilities such as compressor and meter stations would be continuous."[664]

This includes "sensory disturbance associated with noise and artificial light… over the life of the proposed Project. Noise would impact the effectiveness of habitat in proximity to compressor stations, especially for species that are particularly sensitive to human disturbance."[665]



The report notes that "proposed compressor stations would be operating 24 hours a day".[666] This activity amounts to an ongoing, continuous source of pollution and disturbance both for wildlife and people in the area.

(e) No consent to Phase II

The Wet'suwet'en Hereditary Chiefs, on behalf of their clans, have never given their consent for the construction or operation of the CGL pipeline, including the compressor stations. Consultation in order to obtain FPIC should be a process of dialogue and negotiation over the course of a project, from the earliest stages of project planning to implementation and follow-up.667 CGL told Amnesty International that "the Coastal GasLink Project was fully authorized through the certificate received from BC Environmental assessment office which included the pipeline and potential to add compression facilities… This potential was explicitly contemplated and approved during the original environmental assessment and regulatory review, which included extensive consultation with Indigenous and local communities."668 However, none of the consultation documents reviewed by Amnesty International provide information about specific consultations carried out regarding the Titanium Peak or Parrott Lakes compressor stations. In its October 2025 letter, Amnesty International specifically asked CGL to share information and supporting documentation regarding consultations the operator may have carried out with members of the Wet'suwet'en Nation regarding the compressors planned on Wet'suwet'en territory. CGL failed to provide specific information in response to this question.

When asked if the Hereditary Chiefs had provided consent for the compressor stations, Dinī ze' Woos said: "No, absolutely not. It wasn't brought to our attention. Our focus was the pipeline. Then all of a sudden, the compressor stations came into view… We didn't know about them until after. My thinking was that the pipeline was the only thing going through. I didn't think there was going to be more construction."669 Dinī ze' Dsta'hyl similarly said, "[CGL] never told us a single thing about the compressor stations. They haven't consulted."670

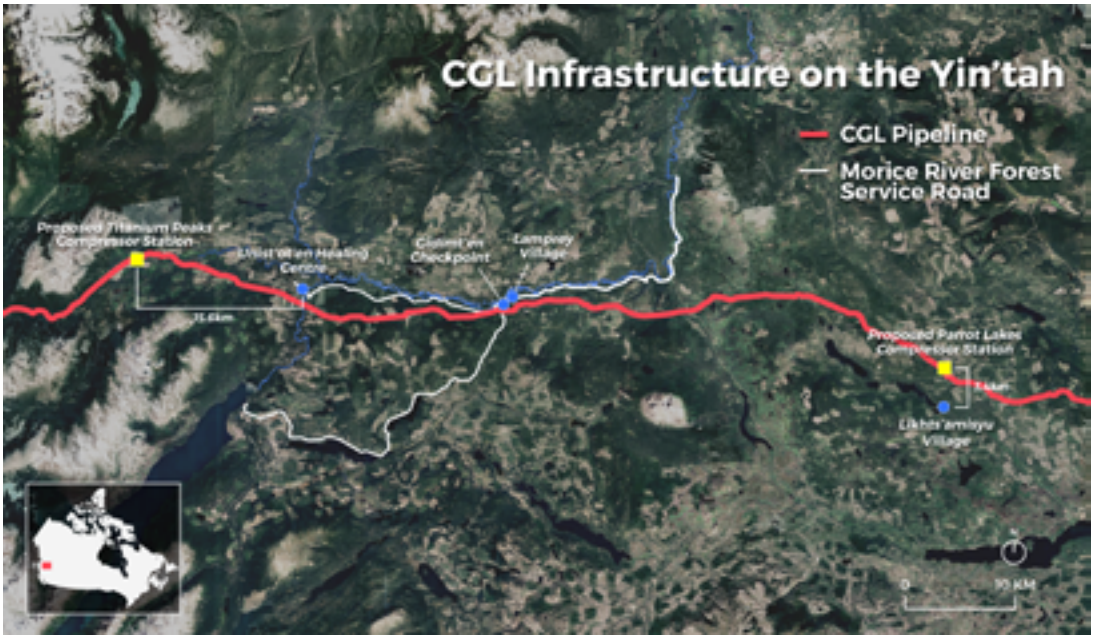
Tsakë ze' Howilhkat (Freda Huson), an Unist'ot'en Wing Chief, told Amnesty International that, after an initial meeting with CGL about the compressor: "We stopped communicating with them, because they interpreted it as consultation. We've never ever agreed or consented to any of this."671

Tsakë ze' Howilhkat, Dinī ze' Knedebeas and other members of Unist'ot'en were invited by CGL to visit a compressor station in Alberta. Tsakë ze' Howilhkat described the visit as follows: "Even wearing ear plugs it's loud. It's bigger than three football fields. They made us leave our cameras in their boardroom. When driving away, we made the driver stop several times… and we could hear [it]."672 Dinī ze' Woos said, "right away our concern was noise pollution, and how it would impact the wildlife."673

D) FINDINGS

(1) Increasing erosion of territorial integrity, and limits on access to the Yin'tah

Titanium Peak and Parrott Lakes are categorized under BC regulations as large compressor stations and together will occupy almost 0.48km^2 of land and require more than 0.1km^2 in new cuts in vegetation.[674] The site of the proposed Parrott Lakes compressor is 3.4km from Likhts'amisyu village (see below) and the site of the Titanium Peak compressor is 15.6km from the Unist'ot'en Healing Centre (see below).[675]



Map of existing and planned Coastal GasLink infrastructure cutting through Wet'suwet'en territory
© Nessie Nankivell

Although the permits for the Parrott Lakes compressor station are still under review, Amnesty International found that the site is already being prepared for expansion. Satellite imagery shows that the blocked area of the planned Parrott Lakes compressor station was cleared of vegetation in September 2020.



Satellite imagery (left) shows the area of the planned compressor site captured on 10 September 2020 adjacent to the cleared pipeline path highlighted with a red line. Imagery (right) from 16 September 2020 shows approximately 7.5 ha has been cleared of vegetation. By the end of September 2020, more than 12ha appears to have been cleared.

In November 2022, satellite imagery showed new scraping at the site and, in May 2023, new construction in the planned area of the compressor station over the pipeline's path. None of the clan members who spoke to Amnesty International revealed any prior knowledge of the establishment of this facility during detailed discussions about the timeline of the clearing with Amnesty International researchers.[676] The BCER notified the Office of the Wet'suwet'en of CGL's permit application in a letter dated 7 November 2023, in which it informed the Nation that it had "conducted an initial impact assessment for this new application… and determined that the potential for the proposed activities to adversely affect Aboriginal Interests [was] complex".[677]

In April 2025, Amnesty International visited the area CGL cleared for the Parrott Lakes compressor station and captured drone footage of the area. Nearly two years after the area was cleared, the site remained vacant.



Aerial view of the area cleared to make way for the Parrott Lakes compressor station, April 2025 © Amnesty International (photographer: Alli McCracken)

When Amnesty International visited the site in April 2025, the fenced-off facility had a sign labelling it as a "valve site".



Valve station at the site of the planned Parrott Lakes compressor station, April 2025 © Amnesty International (photographer: Alli McCracken)

Valve stations are facilities that adjoin gas pipelines, cutting them into segments where operators can control and regulate the flow of gas.[678] Satellite imagery of this facility is consistent with other locations of valve stations and the same facilities are visible at four other planned compressor stations along the pipeline. Compressor stations need to be constructed alongside a valve station.[679] Some types of valve stations require venting.[680] During Amnesty International's visit to the site, there was an audible hissing noise coming from the facility. Signs at the facility warned against fire risk and suggested wearing a mask.

Also in April 2025, Amnesty International visited the site of the clearing for the second proposed compressor station – Titanium Peaks – and captured drone footage of the area:



Aerial view of the area cleared to make way for the Titanium Peak compressor station, April 2025 © Amnesty International (photographer: Alli McCracken)

As is evident from the drone footage of the two cleared areas, the proposed compressor station sites represent a significant degradation and erosion of Wet'suwet'en territory and limit access by Wet'suwet'en members to large tracts of their Yin'tah.

The proposed construction of the two compressor stations will also bring a large industry presence and the construction of "man camps" (worker accommodation), and likely a heavy police and private security presence as well. This threatens to further disconnect Wet'suwet'en members from their ancestral territory and limit their free movement within their lands.

(2) Impacts across clans

Dinï ze' Na'Moks, a Wet'suwet'en Hereditary Chief, described the Wet'suwet'en's collective responsibility to protect the Yin'tah as follows: "[W]e don't own this land. We are caretakers. Our duty is to look after it so it can look after us. It's a very simple law."



Dinï ze' Na'Moks, Wet'suwet'en Hereditary Chief © Amnesty International (photographer: Alli McCracken)

Similarly, Tsakë ze' Sleydo' noted that: "It's the ultimate love and care. I am an entrusted part of this cycle, so of course I'm going to be taken care of, because everything is taken care of. When you're in a natural cycle, everything gets taken care of."[681]

Under 'Anuc niwh'it'en (Wet'suwet'en law), each of the fives clans has the responsibility and authority to control access to their territories.[682] Members of the Nation explained how they use different parts of the territory for different cultural and subsistence activities. However, each clan is required to abide by the "good neighbour policy" which requires all clan members to seek permission before crossing internal territorial boundaries of another clan.



Map of Wet'suwet'en territory © Office of the Wet'suwet'en

Dinï ze' Na'Moks explained: "Our 22,000km^2 of territory belongs to the five clans... The land is divided into 38 separate entities, and that's strategic... so that for all four seasons of the year, people have access to certain things. Like one area would be good for berries, maybe another one for trapping, another one for hunting, another one for salmon. But throughout the year you have access to it. But the reason why we have caretakers of those areas, is to make sure that we don't take more than what is needed, there has to be a way to let certain areas rest... You never want to deplete anything."[683]

As a result, environmental impacts associated with the proposed compressors will not only affect the territory of the clan where they are built, but the whole Nation's ancestral land use and management system, specifically the ability to access and use other clans' territories for cultural and subsistence activities with permission.



Map showing the two planned compressors relative to the territorial boundaries of the five Wet'suwet'en clans ©Nessie Nankivell

Gidimt'en territory is situated between the two compressor stations planned on Wet'suwet'en territory. Because members of the Gidimt'en clan access their territory through the same road as the Titanium Peak's site, the construction and operation of a compressor there would result in a major increase in potentially dangerous traffic.[684] Members of Gidimt'en expressed concern that noise from the operation of both compressor stations would disorient wildlife, especially those used for trapping. Amnesty International has viewed maps of trap lines and conducted site visits of the trap lines documented by the Gidimt'en clan.

Anticipating that the Parrott Lakes compressor will worsen the environmental degradation associated with the construction of the pipeline, Tsakë ze' Tsaibesa explained: "[With] the corridors that they've built with the pipeline [through tree clearing], there's so many wolves up here now... We have lost the moose up here... [But] by our laws, we aren't going to cross into someone else's territory."[685] Moose are an important source of food, whereas wolves are a danger to people; their balance is essential to the predator/prey cycle.

Skiy ze' Dr. Karla Tait shared similar fears about Titanium Peak: "I think it would really impact animal movement. They would probably not even be in Dark House [Unist'ot'en] territory anymore, so we wouldn't even be able to hold programmes anymore. We would need permission from other clans to hunt on their territory."[686]

(3) Threats to key cultural practices

"In Canada, we promised First Nations that they have the right to be able to continue their traditional lifestyle. And for a majority of people in the world now, I guess, there's a complete failure to understand the importance of the land staying ecologically intact, so that people can hunt animals, fish, gather mushrooms and... animals and have medicines. And in order to be able to do that in different places, the land has to stay intact ecologically and CGL has been destroying it. So, for traditional hunter-gatherers, this is the destruction of their existence."

Tsakë ze' Howilhkat (Freda Huson), Wet'suwet'en land defender[687]

As part of their reoccupation efforts, members of the Wet'suwet'en Nation have been re-engaging with land-based cultural and subsistence practices, including hunting, trapping, fishing and the harvesting of berries and a wide range of medicinal plants. For Tsakë ze' Sleydo', before the construction of the pipeline, doing so felt like: "experiencing pockets of liberation. If you can't envision it... It's more powerful when you can feel it... nobody comes past our territorial line unless we say so... Those are pockets of what it feels like to have self-determination."[688]



"Yinka Dini" (People of this Land) by Satsi Naziel capturing the Wet'suwet'en connection to their ancestral territory and their commitment to protecting their Yintah (land) for future generations, 2024 © Satsi Naziel



Tsakë ze' Sleydo' (Molly Wickham), Wet'suwet'en land defender, June 2023 © Amnesty International (photographer: Alli McCracken)

Amnesty International's past research revealed that Phase I severely altered the Yin'tah ecosystem and limited the Nation's freedom of movement and, in turn, members' ability to practice their cultural rights.[689]

Several Wet'suwet'en land defenders expressed feelings of relief following the departure of CGL construction workers and security forces at the end of Phase I. Tsakë ze' K'eltiy (Brenda Michell), an Unist'ot'en Wing Chief, noted that: "We are finally starting to see moose again."[690] Tsakë ze' Sleydo' similarly shared that, during the construction phase, "I wouldn't have even dreamed of being able to harvest something along the road. I feel like we've finally gotten back to feeling free enough and safe enough to do some of [our cultural] practices again."[691]

(a) Hunting

Hunting is an ancestral tradition for the Wet'suwet'en Nation. Tsakë ze' Tsaibesa explained: "Our people were fantastic hunters who could bring fur and other things to the coastal people."[692] Dinï ze' Dsta'hyl similarly noted: "All of this has been hunted for years. Our clan members always come out here. They were hunting moose out here all the time, hunting bear, collecting beaver."[693] Species hunted in the past include groundhog, hoary marmot, mountain goat, caribou, beaver, snowshoe hare, black bear, grizzly bear and deer.[694] As early as 2014, the BC EAO's assessment report identified several residual effects of CGL's operations (both the pipeline and compressors) on wildlife and habitats, including:

(i) Habitat loss, alteration and fragmentation;

(ii) Sensory disturbance, particularly during construction and in the vicinity of compressor stations during operations;

(iii) Increased mortality risk from predators and humans.[695]

As a result, the report concluded that CGL is expected to have moderate impacts on Wet'suwet'en members' Aboriginal right to hunt. The report made clear that "compressor stations located within the traditional territory of an Aboriginal Group may prolong the duration of any disruption to hunting activities in that area, thereby increasing the seriousness of potential impact to that Aboriginal Group's Aboriginal Interest associated with hunting."[696]

Wet'suwet'en land defenders and allies interviewed in April 2025 reiterated these concerns. Gwii Lok'im Gibuu told Amnesty International, "two to three compressors on [Wet'suwet'en] territory alone adds a whole new spectrum of continuous disturbance, not just to humans but also to wildlife and to the environment. There's a tremendous amount of noise pollution."[697]

Kai Nagata, Director of communications at the BC-based CSO Dogwood, who moved to Gitxsan territory in 2016. He also emphasized that "there are [also] subsonic frequencies, that animals will pick up on… Then there's the flare stack. The height and sound of the flames is variable. Flames will be shooting into the sky, it's both loud and bright. I'm a hunter. You don't see a lot of wildlife near power stations."[698]

Dinï ze' Dsta'hyl expressed similar concerns about the noise pollution associated with the compressors: "It's going to be 24 hours, seven days a week. You're going to have these big generating stations working and so you'll end up with that loud noise from the natural gas generating stations."[699] Methane pollution from routine and non-routine venting of the compressors, as well as through leaks and incomplete combustion (methane slip), could also harm wildlife and the Yin'tah's ecosystem.[700]

In addition to wildlife disruptions, Wet'suwet'en land defenders expressed fear that additional clearing and permanent processing infrastructure on the territory would lead to an influx in non-Indigenous hunting activities and industry on the Yin'tah. For Dinï ze' Dsta'hyl: "The worst thing about the pipeline is the fact that they've opened up so much virgin territory. ATVs [all-terrain vehicles] and hunters are disrupting all of our hunting territories because now there's so many extra roads and the whole pipeline corridor now is opened up for ATVs and making it accessible to anybody."[701] Several mentioned their fear of carrying their hunting rifle in front of industry workers and other non-Indigenous individuals whom they encounter on the Yin'tah, fearing that the rifles could be used as pretext for searches or other intimidating interactions.[702]

With the current scarcity of certain protected species such as moose and caribou on the territory, Tsakë ze' Howilhkat (Freda Huson) expressed fear that the construction of the compressor stations could lead her and others who are permanently living at Unist'ot'en to "travel further or live without moose meat. There was a year where we had to buy our meat from [the town of] Smithers, it gets costly."[703]

Finally, Wet'suwet'en land defenders noted that more industrial activity on the territory would further desensitize the wildlife, creating more risks for people on the Yin'tah.[704] Dinï ze' Dsta'hyl noted that members of the Nation have been increasingly "worried about grizzlies [grizzly bears] and worried about wolves. When you take all of their habitat away, they have no place to go, so of course they're going to encroach on domestic properties and things like that."[705]

(b) Harvesting

Before the pipeline construction began, the BC EAO's assessment report acknowledged that "Wet'suwet'en people relied largely on abundant harvests of berries, particularly black huckleberries, for sustenance and trade. Blueberries, cranberries, saskatoons, and soapberries were also very important to the Wet'suwet'en. The Wet'suwet'en would historically use fire to manage the landscape, including the maintenance of seral [transitional] habitat, which would encourage the establishment of berry plants. This practice changed with the Forest Service and an increase in non-Aboriginal settlers in the area."[706]

The report mentioned other concerns that the Office of the Wet'suwet'en identified in relation to plant species, including the general potential adverse effects on vegetation, including old forest, and impacts to traditional medicines and berries.[707] However, the BC EAO's assessment report concluded that CGL's operations were "expected to have minor impacts" on the right to gather food.[708]

Wet'suwet'en land defenders confirmed the cultural importance of berry picking. For example, Catherine Thomas, an Indigenous land defender, explained that: "Huckleberries are used in the feast system. When someone gets a name, at the end of the feast, they hand out 'mih'." She added: "It's in our blood to harvest the berries. I just love them."[709] Tsakë ze' Howilhkat (Freda Huson) also explained that: "Bears depend on them, we never clear them entirely, we leave some for the bears. It's also a significant part of our feasting, we dance with those berries."[710]

Several Wet'suwet'en women told Amnesty International that, during the construction of the pipeline, CGL recklessly destroyed several important berry patches. For example, Tsakë ze' Howilhkat (Freda Huson) mentioned: "Our main huckleberry patch got wiped out by the route of the pipeline."[711]

Tsakë ze' Tsaibesa, a Likhts'amisyu Wing Chief, told Amnesty International that members of the Nation harvest medicinal plants including red willow barks, plantain, labrador tea and spruce tips. She explained: "The plant medicines are so important for our survival. My grannie said: 'It's not just about the medicine that we take. It's about gathering the barks that we need. Being out on the land is part of the medicine'."[712]

Land defenders interviewed expressed fear that air pollution and construction work associated with compressor stations would further impair their ability and right to harvest berries and other medicinal plants. For example, Skiy ze' Dr. Karla Tait expressed concerns over the "[c]arbon and pollutants that will be released into the air. What happens to plants and animals?"[713]

(c) Likhts'amisyu village

The planned location of the Parrott Lakes compressor is 3.4km from Likhts'amisyu village, once an ancestral village site which has now become a land reclamation project for the Nation.[714] Tsakë ze' Tsaibesa told Amnesty International that, "this area is sacred. Parrott Lakes village was a cremation and burial site". She mentioned that, along trails near the village, there is evidence of what were likely pit houses used by the Nation's ancestors. "If we look at our history, we were here in the fall and winter. Our people were semi nomadic," she noted.[715] Before construction of the pipeline began, the BC EAO's assessment report explicitly "identified historic home sites greater than 2km from the pipeline corridor" both north and south of Parrott Lake.[716]

In April 2025, Amnesty International researchers met with Dinï ze' Dsta'hyl, a Likhts'amisyu Wing Chief, who is spearheading the reoccupation effort in Likhts'amisyu village. He explained: "It was a thriving village back in the 1800s. It wasn't until about 1887 that they started rounding our people up and moving them onto reservations. This went right on to the 1920s, 1930s."[717] According to Dinï ze' Dsta'hyl, the ancestral village was first logged in the 1970s, then in the mid-1990s: "[W]e told the government… that we were taking this territory back."[718] He explained:

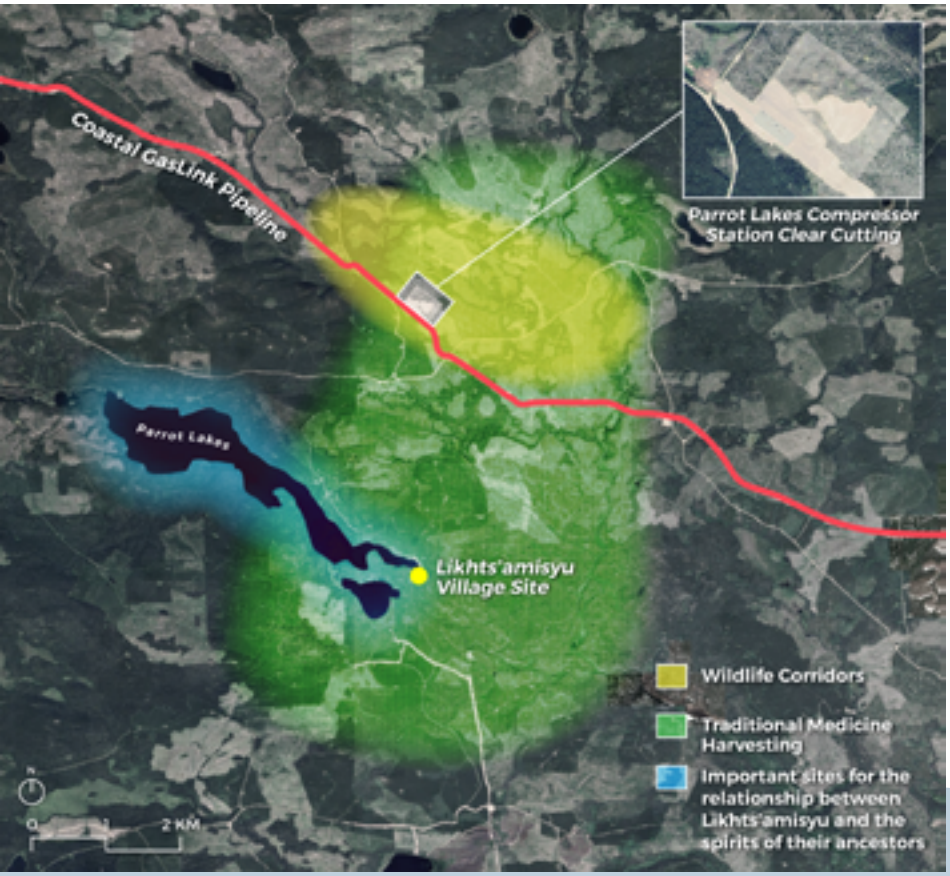


"This is what reconciliation looks like on the ground. You know, from our perspective, we're going to start taking our land back and going to start utilizing it to start raising our children on."[719]

The Likhts'amisyu village site is now a place where members of the Wet'suwet'en Nation can be present on the land where their ancestors lived, engage in cultural practices, and preserve ancestral cremation and burial sites.[720]

In addition to re-occupying their ancestral village, the Likhts'amisyu clan intended to build a meteorological station to monitor changes in the climate.[721] Today, the village comprises three cabins, a summer kitchen, a greenhouse, a garden and solar panels, and regularly hosts culture camps for youth members of the Nation.[722]

In the long term, the clan's vision is to create a fully self-sustaining village, where Wet'suwet'en people, including elders, can live full-time. The village continues to be a burial site of significant spiritual importance. Tsakë ze' Tsaibesa shared with emotion that she had spread the ashes of her daughter, who passed away at a young age, near the lake: "I came here a few years ago we could hear a little girl crying. We got to the top of the road and drove right. The crying got stronger… It's amazing how [we hear] our ancestors. My little girl is an ancestor."[723]



Map of some of the ecosystems, land-based practices and ancestral relationships around Likhts'amisyu village mapped during interviews Amnesty International carried out in April 2025. © Nessie Nankivell

Dinï ze' Dsta'hyl told Amnesty International that the perimeter for the planned Parrott Lakes compressor station was cleared without the approval of the House Chiefs: "They cleared that spot with absolutely no permission from Dinï ze' Smogelgem or Dinï ze' Lho'imggin. They never even… consulted them. All they did is they went through the Oil and Gas Commission [today known as the BCER], got their permits and moved ahead on developing it."[724]

Tsakë ze' Tsaibesa described the area where the forest was cleared for the planned site of the Parrott Lakes compressor station as a "big tree canopy." She and her relatives were in the process of mapping wildlife corridors in the area: "[We were] like 'poopologists'. Just like, looking for tracks. We were looking for poop. We were looking for basically any sign of life. Moose, deer, bears, lynx, we documented all these different types of animals that were using the trails… my favourite part [was] looking on the road… you could see the tracks of lynx chasing rabbits."[725]

The Parrott Lakes compressor station is likely to expose Likhts'amisyu village to noise pollution, with an average daytime noise level of around 36 dBA (45.9 dBA cumulative) and an average night-time noise level of 36 dBA (38.6 dBA cumulative) at a distance of 1.5km from the compressor.[726] These levels are just under the World Health Organization's environmental night-time noise limit of 40 dBA to prevent negative human health consequences including regular sleep disruption and cardiovascular health risks correlated with low-frequency noise.[727] Noise levels during venting, or blowdowns, depend on the size and length of the pipeline.[728] According to TC Energy, the "sound during a blowdown can be as loud as an airplane engine and may last anywhere from a few minutes to multiple hours, depending on the amount of pipe being depressurized."[729] Regular venting at the Parrott Lakes compressor station would expose the Likhts'amisyu village to noise levels which are detrimental to health and well-being.[730]

(d) Unist'ot'en Healing Centre

The planned location of the Titanium Peak compressor is 15.6km from the Unist'ot'en Healing Centre.[731] Skiy ze' Dr. Karla Tait explained: "The Unist'ot'en Healing Centre, which is translated as 'house of healing,' was established by Freda [Huson more than 14] years ago as [a way of] reoccupying traditional territories and trying to preserve what was left of our intact traditional territory. It is meant as a space where we can engage in cultural practices, like trapping and hunting, and medicine harvesting and food harvesting."[732] For Skiy ze' Dr. Karla Tait, it is critical for members of the Nation to have a safe place for healing, "without the distractions and pressure of colonial existence".[733]



Unist'ot'en Healing Centre, June 2023 © Amnesty International (photographer: Alli McCracken)

The Titanium Peaks compressor station will have an average daytime noise level of around 36 dBA (45.9 dBA cumulative) and an average night-time noise level of 36 dBA (38.6 cumulative) at a distance of 1.5km from the compressor.[734] Regular compressor venting, or blowdowns, would expose the Unist'ot'en Healing Centre to noise levels which are detrimental.[735]

The BC EAO's assessment report warns that Titanium Peak is "proposed within the Telkwa caribou range" and that: "Caribou are likely to alter their movement to avoid noise, activity and disturbance associated with construction activities, as well as noise from permanent facilities such as compressor stations, which could increase energetic demands [such that the caribou require more food]. The [right of way] could provide a travel route for predators, increasing the predations risk to caribou."[736]

Tsakë ze' Howilhkat (Freda Huson) and Skiy ze' Dr. Karla Tait also expressed concerns about the effect of light and noise pollution on wildlife and therefore on the clan's ability to hunt.[737] The compressor station "could disrupt every aspect of our programming… It's proposed for a location within a canyon that will amplify the noise. So, we will hear a constant humming."[738]

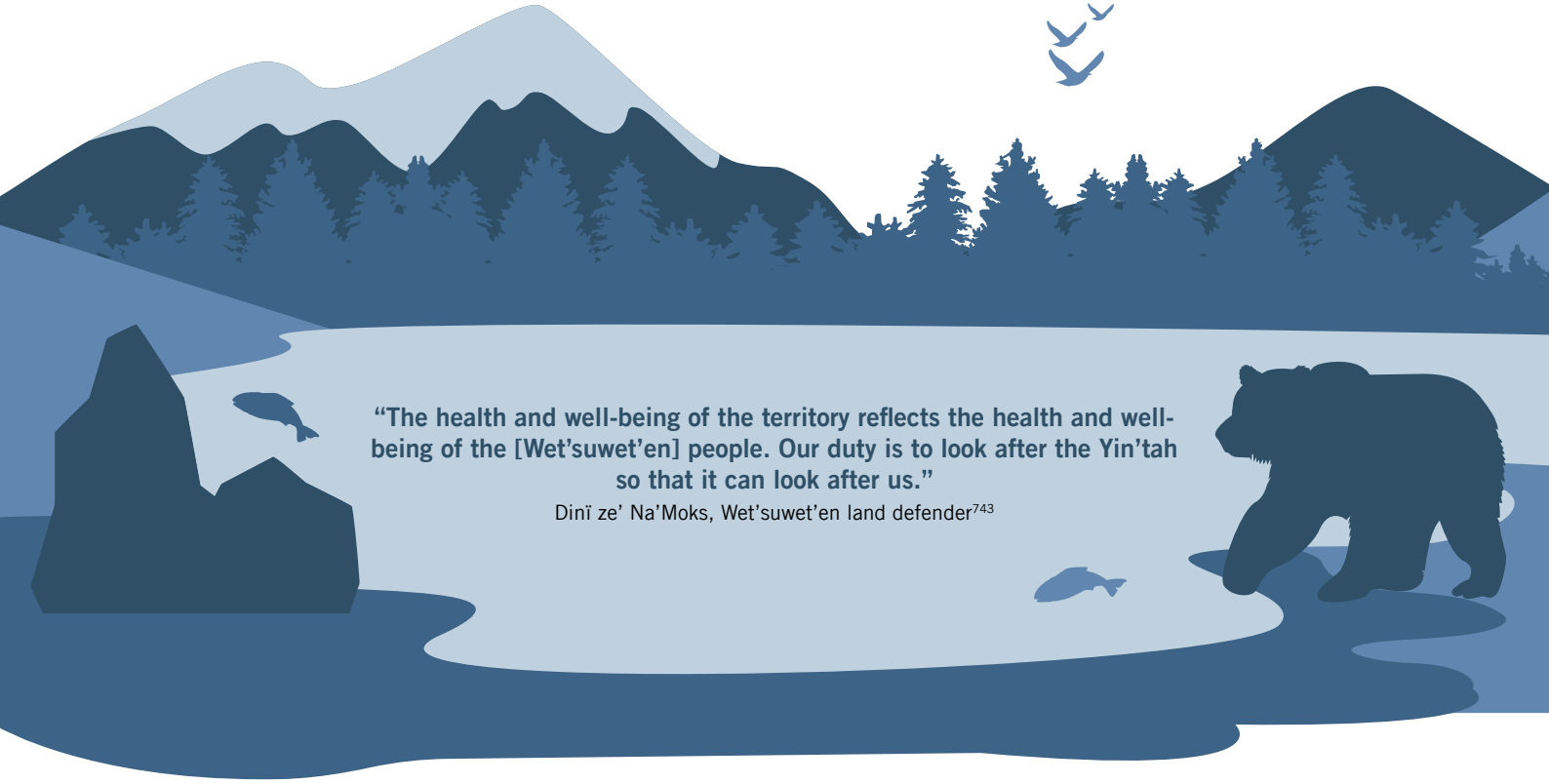
Unist'ot'en clan members also feared that construction work would increase road traffic, leading to dust pollution and road accidents.[739] The Morice Forest Service Road is a dirt road and a substantial increase in the size and volume of construction vehicles travelling down it during construction of the compressor stations is likely to generate road dust; this also occurred during Phase I. Road dust can cause various health problems, including respiratory issues like coughing, wheezing and increased severity of asthma attacks, as well as cardiovascular problems such as high blood pressure and heart attacks.[740] "Roads will turn into highway level again which we have already seen during pipeline construction," noted Karla. They also anticipate that the renewed presence of industry and security personnel will affect the safety of members of the Nation in and around Unist'ot'en, particularly women. Tsakë ze' Howilhkat told Amnesty International:[741]

"We'll lose the quietness and peacefulness, it'll become more like an industry town. They usually employ people who are not from here, so we don't feel safe."

Skiy ze' Dr. Karla Tait added that clan members' unease around the presence of construction workers and RCMP officers will make it difficult for the healing centre to continue attracting members of the Nation for in-person activities. For Karla, these disruptions will particularly hurt youth at a time when the centre's programming was gaining momentum, and the impacts on cultural transmission for the Nation as a whole could be devastating: "[I]f we don't reclaim this knowledge, it will not be available anymore. And we will lose it... We don't have another house group doing this work."[742]

(4) Harms to mental health and well-being

(a) The centrality of the Yin'tah: Wet'suwet'en conceptions of wellness and connection to land



"The health and well-being of the territory reflects the health and well-being of the [Wet'suwet'en] people. Our duty is to look after the Yin'tah so that it can look after us."

Dinï ze' Na'Moks, Wet'suwet'en land defender[743]

Mental health and the Yin'tah are deeply connected for the Wet'suwet'en Nation.[744] Wet'suwet'en conceptions of wellness put the Yin'tah and connectedness at their centre.[745] Yin'tah means:"We are the land, and the land is us.[746] In Wet'suwet'en ways of knowing, "[c]onnection to the land in all aspects of life, cultural, economic, spiritual and others is central".[747] To be on the land means more than connectedness to the physical land. "Being out on the territory is connected to the Wet'suwet'en language, ceremony, cin k'ikh (history), c'idede' (stories from long ago), and niwhhts'ide'nï (ancestors)."[748] It is through the land that current generations can connect to ancestors and culture. Cultural practices are transmitted on the land, and Wet'suwet'en language and culture are practised and passed on through presence on the land.[749] Gwii Lok'im Gibuu shared that: "This environment, this land, it nourishes us. It's our society. Our culture is matrilineal, so we follow the mother. The land is the mother at the bottom of everything that gave birth to the trees, that gave birth to the animals, that gave birth to us, ultimately. [The land] deserves the highest respect."[750]

Skiy ze' Dr. Karla Tait, Unist'ot'en land defender, clinical psychologist, and Director of Programming for the Unist'ot'en Healing Centre, explains wellness as: "restoring a wholeness to ourselves," stating that "balance is the best way to say it in the English language".[751] She described how being on the land provides a "whole-being-experience" that engages all senses. Land provides the space for well-being to flourish. She explains: "A safe space, safe container is the first thing that is needed for healing. In Western terms that might be the therapeutic room, and I think for Indigenous people that container is your traditional territory. It can be the river, a quiet spot on the river trail. Where you can feel the presence of the ancestors. It's amazing you can have this so readily out here. Without the distractions and the pressure of colonial existence."[752]



Skiy ze' Dr Karla Tait, clinical psychologist and Director of Programming for the Unist'ot'en Healing Centre, June 2023
© Amnesty International (photographer: Alli McCracken)

Wet'suwet'en land defenders spoke frequently about how important being on the land is to their well-being.[753] Tsakë ze' Howilhkat (Freda Huson) said: "[The Yin'tah] is really significant because it's a healing space. I left the Yin'tah to get educated and I felt spiritually dead. I started coming back on to the territory and that little light came back in me. I found my way back [to the Yin'tah] and I found my light again."[754] "My mind is clearer, I'm a lot happier," when on the land, said Forest Pete, a Gidimt'en man.[755] Skiy ze' Jocey Alec, a Wet'suwet'en land defender, described her experience of bringing a group of Wet'suwet'en women out on to the Yin'tah: "For them to reconnect to the land was super inspiring and made me feel super good inside. Just to see their faces, happy and smiling. To be able to be on the land is super healing. The way I see it is you heal the land and the land heals you."[756] Shaylee Holland, a Wet'suwet'en land defender, stated: "Out here [on the Yin'tah] is freeing. My mind's less foggy and I can think clearly."[757] "If I'm having a really hard day or something's happened, the water will always ground me," said Anna Holland, a Wet'suwet'en land defender.[758]

(b) Mental health impacts and harms



"We're experiencing intergenerational battle fatigue… We physically won't survive [the construction of compressors]. We were never the instigators but we have taken the brunt of all the violence."
Tsakë ze' Sleydo' (Molly Wickham), Wet'suwet'en land defender[759]

Existing research on mental health of Indigenous Peoples demonstrates that "disruptions to cultural practices, access to the land, and a healthy environment can lead to mental stress for community members (including anxiety, depression, stress and fear), substance use, suicidal ideation, and physical health impacts. Conversely, researchers have noted that when individuals are able to engage in land-based activities and access traditional foods, physical and mental health improve."[760]

Given that mental health and the Yin'tah are deeply connected for the Wet'suwet'en Nation, disruptions in access to or damage and destruction of the Yin'tah can cause adverse mental health impacts and threaten the Nation's continued existence.[761] The existing construction of the CGL pipeline has already caused harm to the mental wellness of Wet'suwet'en people, and the proposed construction of compressor stations risks causing significant further mental health harms.[762]

(i) Destruction of the Yin'tah and disruption of land-based cultural practices

Wet'suwet'en land defenders described their distress at seeing the Yin'tah harmed during the first phase of construction of the CGL pipeline. "[It's had a big impact] on my family and on my health," said Tsakë ze' Sleydo'. "When [CGL] started drilling under [the river] Wedzin Kwa, me and my sisters were all bedridden. That's the stress and the grief of it. It's taken a big toll on everybody."[763]

After visiting the construction site of the Parrott Lakes compressor station, Tsakë ze' Tsaibesa stated: "Seeing what we saw today and hearing the gas going through the pipes, I was quite impacted by that. I just feel incredibly disheartened… I feel a humongous sense of guilt as a Chief that I couldn't stop these things."[764] Catherine Thomas said: "Seeing the destruction broke me. The destruction of the land is horrible."[765]

Being present on the Yin'tah and engaging in cultural practices such as trapping provides vital support for wellbeing. "It is good for the spirit," explained Tyler Alec, a Gidimt'en' youth who lives on the land and is the son of a Hereditary Chief.[766] The animals trapped, including wolverines, lynx, weasels, and beavers, are used for various purposes: as a source of food, warm clothing and for cultural practices.[767] Importantly, they form a central part of Wet'suwet'en feasts and are given as gifts.[768] Dinï ze' Woos and his family, for example, collected animals over many months in preparation for a large feast and naming ceremony. Trapping is also an activity through which cultural heritage and knowledge are transmitted from elders to younger generations and through which youth learn the Wet'suwet'en language. "Through years I've been here, I've learned from Hereditary Chief Woos, learning about entirety of trapping, cultural teachings, stories," describes Forest Pete, a Wet'suwet'en youth.[769]

Yet the loud noise from construction and compressor operation risks scaring animals away from the area, making trapping and hunting difficult or impossible. Such impacts would significantly disrupt trapping and hunting, and thus the wellness benefits of practising Wet'suwet'en culture.

A central reason for the Wet'suwet'en Nation's struggle to defend the Yin'tah is ensuring it is protected for future generations.[770] According to Dinï ze' Na'Moks: "We put the child at the centre, that's our law. That's why our duty to the land, air, water, salmon, the berries, the moose, our medicines is so strong, we're not doing it for ourselves, everything is for our grandchildren and our great grandchildren, those yet to be born. Those are the instructions we were given by the Chiefs."[771] Damage to the Yin'tah undermines the Nation's sense of duty to protect the land for future generations and takes a toll on members' mental wellness. Reflecting on the potential destruction that would be caused if the compressor stations are built, Tsakë ze' Howilhkat (Freda Huson) said: "The life we know will never be the same. We won't get to see the beauty of the land and animals. It'll feel like we failed our duty for the next generation."[772] Tsakë ze' Tsaibesa stated: "My grandson's going to pay for this. I'm guilty of not protecting his future."[773]



(ii) Disruption of healing

Members of the Nation describe how the land and their ancestors can take or hold pain, relieving the mental suffering of individuals. Tyler Alex shared: "The ancestors… are here to protect us. Whatever negative things you have inside, it will come out. The ancestors will take care of it, they will heal you. That's what is so powerful about this place. You can feel that they are out here."[774]

Skiy ze' Dr. Karla Tait shared: "When I reflect on and recognize how much hurt, trauma and disturbance the land can hold, but still be healing, it's inspiring. I don't know that I can be anywhere else. I think I need to be here in order for the land to take back all of this heavy colonial oppression that we live with."[775]

> **"The ability to drink the water out of Wedzin Kwa is a huge thing for us, that leads back to that sense of spiritual wellness, cultural wellness, because when we're able to drink the water that comes from our territories, I believe that it carries our ancestral history. It carries the memory and the spirit of the ancestors that came before us, that spent time in those rivers. The salmon that spawn there every year – when we are physically ingesting that into our bodies, we become a part of that… We could go get water from the store, but that water doesn't have the connection to the land that we need. It doesn't have everything that comes from our territories. It doesn't have the memory; it doesn't have the spirit… The fact that we can't drink the water out of Wedzin Kwa anymore is devastating. And nobody would understand that unless they drank it every day, for the last 10 years, or for the last 1,000 years, or 10,000 years, and then to not have that changes us physically."**
>
> Sleydo' (Molly Wickham), Wet'suwet'en land defender[776]

For individuals experiencing feelings of anxiety, depression or disconnectedness, or who are struggling with alcohol or substance abuse, being on the Yin'tah can provide solace or a pathway to wellness, or support recovery from addiction. The land is a place where people can release anger or other negative feelings. Tyler Alec explained: "If your mind is in a bad place, if you're drinking, and you come out here, you learn the traditional routes, trapping, hunting, taking care of this place. You can go for a walk, sit by the riverside. Let it out… As the days go by, your mind feels at ease. This is home. This is our home."[777]



Critically, access to the Yin'tah supports healing the ongoing wounds of colonization. According to Gwii Lok'im Gibuu: "In our communities, there's a huge need for healing coming out of a tremendous amount of trauma in losing so many of our relatives, in losing so much of our languages, in losing so much of our lands, in growing up in different societies."[778]

"The way to heal yourself from generational trauma is to come down here," said Catherine Thomas.[779] Tsakë ze' Sleydo' stated: "For us [because of] the fallout of colonization, it's important for people to find a sense of belonging inside themselves… just to be here and be out on the Yin'tah. You could do therapy for 10 years, or you could come out to the Yin'tah and engage in these practices."[780]

As noted by Canada's National Inquiry into Missing and Murdered Indigenous Women and Girls, colonial violence "continue[s] to threaten the health and well-being of Indigenous people".[781] Current generations carry these traumas with them. Dinï ze' Woos explained: "These are the stories at the campfire site that I was told. People literally saw white people coming in, chasing [Indigenous] people away, shooting them, murdering them, raping the women and the children. All of this was carried through the generations. It was bestowed on to me as I was training. This is what you need to carry as well… PTSD, mental health, the genetic behaviour that we have inherited from our ancestors right from the point of contact, it never went away. It is still with us. Most of us don't know how to deal with it, so we turn to alcohol, drugs, suicide, violence."[782]

"I grew up not really knowing my culture," said Shaylee Holland. "My mom was in foster homes, so she didn't know anything to pass down to us. So coming out to the land, I get to be able to learn and meet all of my relatives and learn from them. I find healing and grounding here. It truly is beautiful to be out here, it's renewing. I know a lot of youth, they lost their culture too… Sometimes being out here is healing enough that I am able to stand [up and defend the Yin'tah]."[783]

"People are literally killing themselves because they feel they don't have anything to live for. When there's this reassertion, it gives people hope. It gives a sense of goals and sense of where we can go collectively."
Sleydo' (Molly Wickham), Wet'suwet'en land defender[784]

(iii) Industry presence, police and private security

The proposed compressors' construction will bring a large industry presence, the construction of "man camps", and likely a heavy police and private security presence as well.[785]

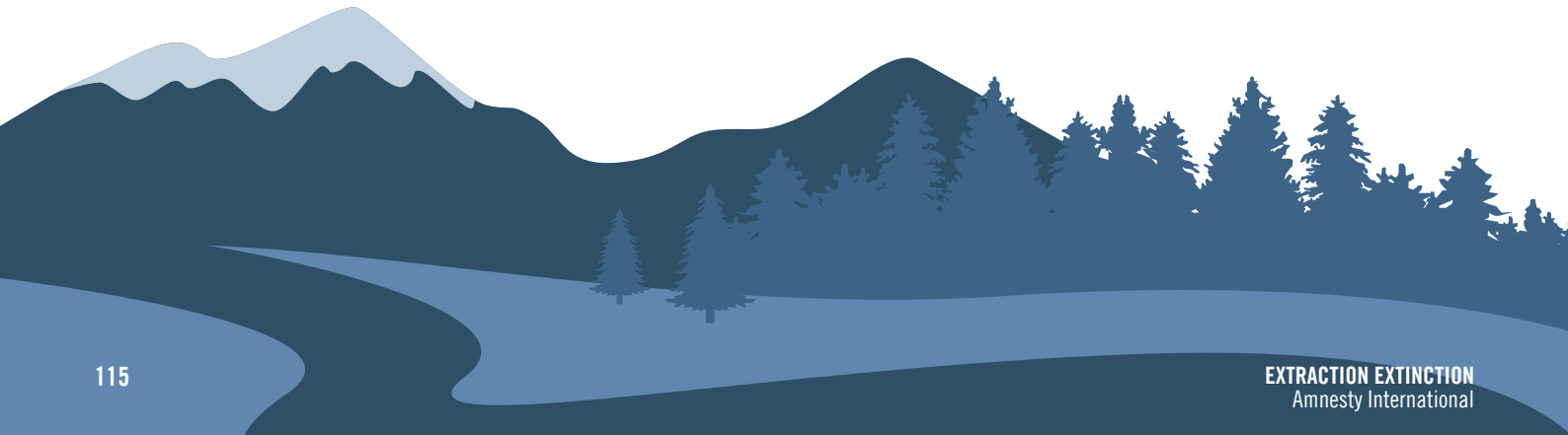
During the construction of the CGL pipeline, police and private security forces used harassing, aggressive and violent tactics against land defenders.[786] They intimidated, harassed and unlawfully surveilled members of the Nation, including by following, filming and photographing them regularly.[787] As explained above, members of the Nation were also subjected to forceful arbitrary arrest.[788] These tactics harmed the mental health of defenders, who described feeling intimidated, unsafe, fearful, anxious and angry, and in some cases experiencing symptoms consistent with post-traumatic stress disorder.[789] "My sisters will be traumatized for life," shared Tyler Alec.[790]

Members of the Nation anticipate similar tactics during compressor station construction, with hostile construction workers, security personnel and RCMP officers creating a sense of insecurity while establishing checkpoints, conducting surveillance, following members of the Nation, and potentially restricting access to the land.[791] They predict "reluctance and unease of community members to come out here [on the territory]",[792] and warn that such conditions will curb visits to culturally significant sites, interrupting language use, ceremonies, and the intergenerational transfer of Wet'suwet'en knowledge.

The majority of Wet'suwet'en land defenders on the frontline of resistance against the CGL pipeline are women. During the first phase of pipeline construction, Wet'suwet'en women land defenders experienced threats and acts of gender-based discrimination and violence committed against them by the RCMP, private security personnel and CGL employees.[793]

According to Wet'suwet'en land defenders, during initial pipeline construction, the introduction of CGL worker accommodation on Wet'suwet'en territory, which housed predominately non-Indigenous male workers, contributed to increases in threats and acts of gender-based discrimination and violence against Wet'suwet'en women.[794] Tsakë ze' Sleydo' told Amnesty International that there are people "who don't feel safe to come out [on the Yin'tah] because of all the man camps".[795] Skiy ze' Dr. Karla Tait stated: "The ways [employees of CGL and Forsythe Security] interact with us, in aggressive, intimidating or suggestive ways, makes us feel unsafe."[796]

Wet'suwet'en women land defenders have emphasized their proximity to the Highway of Tears – a 724km length of Yellowhead Highway 16 in BC where many women (mostly Indigenous) have disappeared or been found murdered – as well as the high rates of missing and murdered Indigenous women and allegations of the involvement of law enforcement officers in these disappearances and murders.[797] All of these elements, in addition to direct threats and acts of gender-based violence, make them feel unsafe while being on the Yin'tah. Construction of the proposed compressor stations would likely bring a new influx of male workers onto the Yin'tah, once again placing the security and safety of Wet'suwet'en women at risk.



E) CONCLUSION

Mitigation. Canada's continued investment and subsidies to the oil and gas sector counteract the country's heightened responsibility, as a high-income, historically high GHG emitter, to mitigate the climate crisis and puts the health and rights of Indigenous Nations and other fenceline communities and ecosystems at risk. As the world's fourth largest producer of crude oil, and fifth largest producer of natural gas, Canada's failure to lead global efforts to decarbonize its economy and active investment in fossil gas breaches the country's conventional and customary obligations pertaining to the protection of the climate system.

Rights to self-determination and FPIC. Canada recognizes that Indigenous Peoples have an "inherent right of self-government" – recognized and affirmed in Section 35 of the Constitution Act of 1982 – which includes the "right to govern themselves in relation to matters that are internal to their communities, integral to their unique cultures, identities, traditions, languages and institutions, and with respect to their special relationship to their land and their resources."[798] Canada also recognizes that "meaningful engagement with Indigenous Peoples aims to secure their free, prior and informed consent when Canada proposes to take actions which impact them and their rights, including their lands, territories and resources."[799] Since Haida Nation v. British Columbia (2004), federal and provincial governments have been subject to a formal duty to consult Indigenous Peoples and accommodate their interests whenever their asserted or established Aboriginal or treaty rights may be affected by government conduct.[800]

CGL claims that "[a]ssertions that the CGL Project proceeded without consultation and engagement are categorically false. The CGL Project stands as one of the most significant examples of partnership between industry and Indigenous communities, including Wet'suwet'en communities, in Canada."[801]

While the operator has entered into agreements with 20 Indian Act band councils – including five Wet'suwet'en band councils – the Wet'suwet'en Hereditary Chiefs, on behalf of their clans, have never provided their FPIC for the CGL pipeline project, including the proposed construction of the compressor stations. The Hereditary Chiefs have authority over the portions of the Yin'tah that the pipeline passes through and where the compressor stations would be built. When Indigenous Peoples withhold their consent, this is "expected to convince" the other party not to take the risk of proceeding with the project.[802] Nevertheless, CGL and the Government of British Columbia proceeded with the construction of the pipeline and now are planning to build additional infrastructure, without the Hereditary Chiefs and their clans' FPIC.Moreover, in situations where an Indigenous People refuses to engage in a consultation process, former UN Special Rapporteur on the rights of Indigenous Peoples, James Anaya, has said that this amounts to the same outcome as if they had entered into consultations and then withheld their consent.[803] Amnesty International considers the operation of the CGL pipeline and the construction of the compressor stations to be an ongoing violation of the Wet'suwet'en Hereditary Chiefs and their clans rights to self-determination and to consultation in order to obtain their FPIC.

Right to health and integrity of the person. Wet'suwet'en land defenders have experienced and continue to experience both physical and psychological impacts as a result of the first phase of construction of the CGL pipeline, including stress, anxiety, weight loss and depression.[804] The situation has caused and continues to cause them feelings of powerlessness, anger, sadness, disappointment, fear and worry.[805] Amnesty International considers that Wet'suwet'en Nation members' right to health, especially mental health, and integrity of the person have been seriously undermined.

Right to a healthy environment. Compressor stations risk causing continuous air pollution, noise, vibration and bright lighting that may alter wildlife presence and habitat and lead to environmental degradation of Wet'suwet'en territory, undermining the Nation's right to a clean, healthy and sustainable environment. Furthermore, Canadian and BC authorities' failure to meaningfully engage with the demands of the Wet'suwet'en Nation for rehabilitation, monitoring and mitigation of environmental impacts (past, current and future) contravenes Wet'suwet'en people's procedural rights.

Right to effective remedy. Members of the Wet'suwet'en Nation have not received reparations for the violations of their human rights that occurred during the first phase of construction of the CGL pipeline, violating their right to effective remedy.

Corporate accountability. Both BC regulatory authorities and CGL should halt plans to build compressors on the Nation's territory, unless they obtain the Nation's FPIC and can demonstrate that such development will have no negative effects on the health or environment of the Wet'suwet'en people or the integrity of the Yin'tah.

3. Colombia: Artisanal fishers are under threat for protecting wetlands from oil pollution

The Magdalena Medio region of Colombia spans around 400km along the Magdalena River, Colombia's main watercourse. It is located in central Colombia and far from any major city. Largely abandoned by the state, several non-state armed groups have been seeking control of the territory, including the water bodies. The region has long been subjected to extractivism.[806]

Vast wetland areas cover 26% of Colombia. Wetlands are lands either covered by or saturated with water. They are important ecosystems for balancing the global climate system through carbon sequestration, flood control and preservation of habitat for endangered species.[807] The Magdalena Medio alone holds 2,825 different categories of wetlands.[808] At the heart of the Magdalena Medio lies the country's largest oil refinery, the Barrancabermeja Refinery, operated by Ecopetrol SA (Ecopetrol) in Barrancabermeja city.[809] Ecopetrol is majority state-owned and is Colombia's largest integrated oil and gas company.[810] The refinery is surrounded by numerous oil wells.



Barrancabermeja is the biggest city in the Magdalena Medio region, Colombia's epicentre of oil production and the heart of a vast network of rivers, lakes and wetlands surrounding the Magdalena River. Barrancabermeja also hosts the largest of Colombia's two oil refineries. March 2024
© Luca Zanetti

The refinery borders Lake Miramar, which separates it from the city. Lake Miramar flows into the river Caño Rosario, which runs alongside the refinery and into the river Caño San Silvestre, a vital corridor for biodiversity and for artisanal fishers, including those from the Federación de Pescadores Artesanales, Ambientalistas y Turísticos del Departamento de Santander (Federation of Artisanal, Environmental and Tourist Fisherfolk of the Department of Santander, FEDEPESAN).

FEDEPESAN brings together around 500 fishing families who depend on artisanal fishing in lakes and rivers around Barrancabermeja city. Yuly Velásquez, FEDEPESAN's president, has led a courageous fight against water pollution and corruption. As a result, she, her relatives and her colleagues have faced threats, attacks and even attempted killings over the last five years.[811]

In 2018, a spill at the Lizama 158 oil well in rural Barrancabermeja caused serious environmental damage, disrupting artisanal fishing. Ecopetrol was sanctioned by the National Environmental Licensing Agency and agreed to repair the environmental damage and compensate the community to avoid criminal prosecution.[812]

Since 2019, FEDEPESAN has publicly denounced pollution caused by companies, including Ecopetrol, reportedly dumping waste into regional water bodies.[813] Ecopetrol has denied such accusations.[814] In 2020 the federal authorities found evidence linking repeated incidents of water pollution in the Magdalena and Caño Rosario rivers to the refinery.[815]

FEDEPESAN has also denounced alleged corruption in the use of public funds meant to restore Lake San Silvestre and support associations of artisanal fishers, by contractors of Ecopetrol, the Santander department regional environmental authority and Barrancabermeja's municipal government.[816]

In Yuly Velásquez's words, "defending our rivers and wetlands – and the environment in general – from corruption and pollution means risking our lives."[817] Amnesty International has documented a series of violent incidents against Yuly Velásquez and her colleagues since the beginning of their activism. These include a death threat against FEDEPESAN's vice-president circulated in a pamphlet in November 2020,[818] bullets fired at Yuly Velásquez's home in January 2021, intimidation of artisanal fishers during protests in August 2021, and further firearms attacks against Yuly Velásquez in May and July 2022, the latter injuring a state-assigned bodyguard. FEDEPESAN members have also faced threats from armed groups and repeated theft of their boats and engines.[819]

In 2024 and 2025, armed groups publicly directed new threats at both FEDEPESAN and the Regional Corporation for the Defence of Human Rights (CREDHOS), a local human rights NGO supporting artisanal fishers and other local communities.[820] On 15 February 2025, FEDEPESAN members publicly declared that they felt forced to flee their territory, as fishers were being harassed while working, leaving their families without income or food. Several families were forcibly displaced in 2025.[821]

Yuly Velásquez's case is not isolated. Colombia is the deadliest country in the world for environmental human rights defenders, with the highest number of killings recorded between 2012 and 2023.[822]

In 2024, FEDEPESAN and CREDHOS filed a collective legal action against the Santander department regional environmental authority and the Barrancabermeja local government for failing to stop pollution in the region's lakes and rivers. The judge joined Ecopetrol, Ecodiesel (a palm oil company operating within the refinery), the Barrancabermeja water company and the National Authority of Aquaculture and Fishing as defendants in the case. In July 2025 a first ruling confirmed that the collective right to a healthy environment had been violated, ordering new water analyses with FEDEPESAN's participation to identify the damage and hold those responsible accountable.[823] This decision was appealed.

In this complex web of pollution and violence, Yuly Velásquez and FEDEPESAN continue to defend the integrity of an ecosystem their livelihoods depend on. Under Yuly Velásquez's leadership, FEDEPESAN carries out community monitoring of biodiversity losses and pollution. They monitor the Antillean manatee, an endangered and iconic species of the Magdalena Medio wetlands, and their work has gained national and international media attention.[824]



Yuly Velásquez, President of the artisanal fishers' association FEDEPESAN, May 2024 © Natalia Bronny

In 2024, Amnesty International Germany awarded Yuly Velásquez and FEDEPESAN its Human Rights Award. "We are demanding justice for our fishers, for our fishing community, but we are also demanding justice for the flora and fauna. We will keep fighting, protecting our rivers and lakes, because they are the source of sustenance for many households," said Yuly Velásquez upon receiving the award.[825]

4.Ecuador: Warriors of the Amazon fight against gas flaring

The Amazon rainforest is one of Earth's most important carbon sinks and an ecosystem incredibly rich in biodiversity.[826] Fossil fuel extraction is one of the most environmentally damaging activities in the Amazon.

Ecuador – which is partially covered by the Amazon rainforest – is one of Latin America's leading crude oil producers. Oil is the country's largest export,[827] leaving Ecuador's economy heavily reliant on fossil fuels.[828] As a result, Ecuador has become a high GHG-emitting economy.[829]

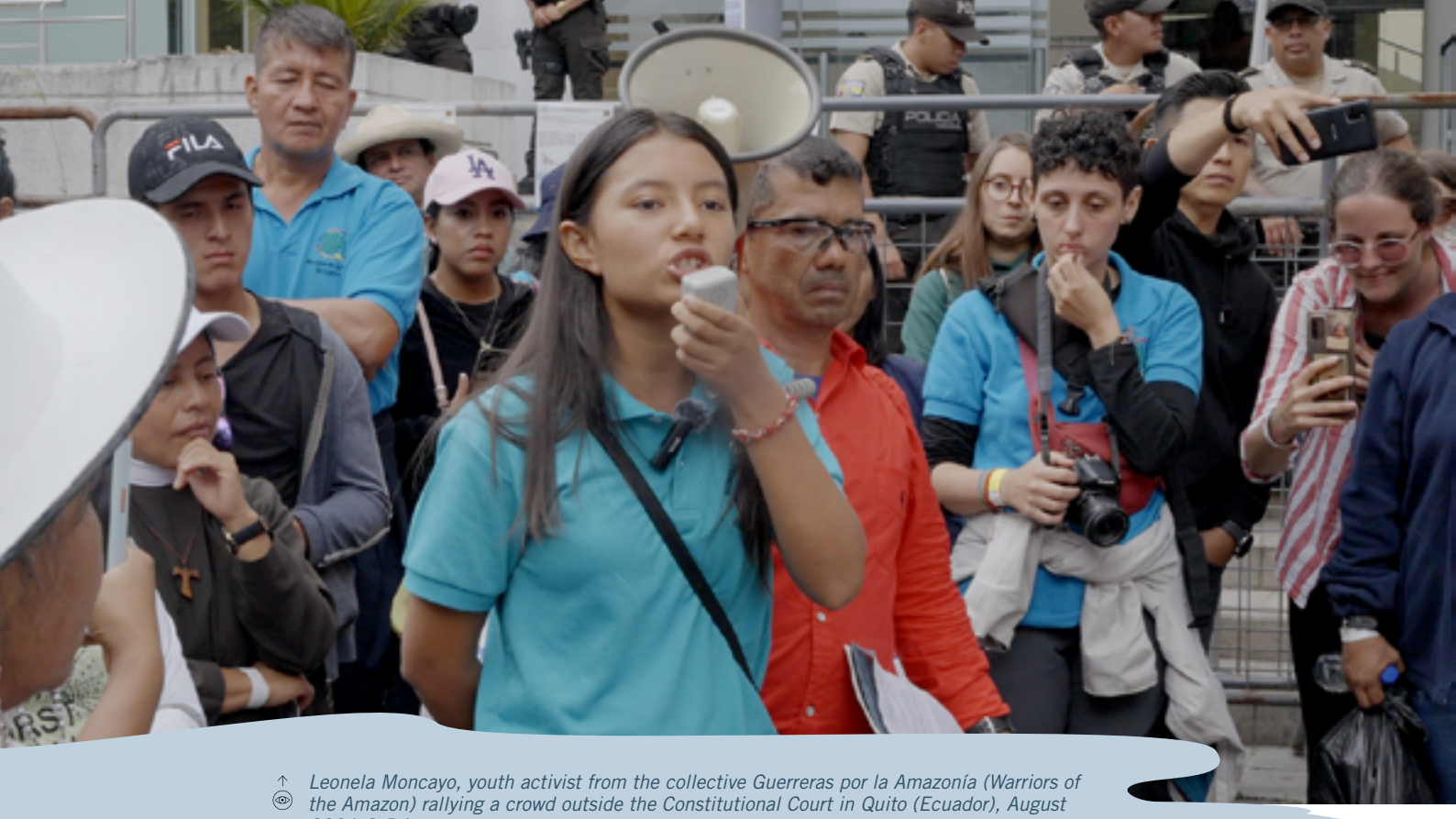
Gas flares in the Ecuadorian Amazon, June 2024 © Amnesty International (photographer: Iván Martínez)



Routine gas flaring – burning off excess gas during oil extraction – is one of the most harmful and polluting practices of the oil industry. It releases gases including methane, nitrogen monoxide, carbon monoxide, nitrogen oxide,[830] respirable particulate matter,[831] hydrogen sulphide[832] and benzene[833] into the atmosphere. In addition, routine gas flaring causes serious environmental harm to surrounding areas.[834] Oil companies use routine flaring to reduce operating costs.[835] In the Americas, companies in Ecuador, the USA, Mexico, Argentina, Brazil and Venezuela often resort to routine gas flaring during extraction.[836]

Ecuador's 2019 NDC committed the country to an unconditional GHG emissions reduction of 9% compared to a 2025 baseline scenario,[837] explicitly referencing reductions in routine gas flaring as a mitigation strategy.[838] That same year, Ecuador also joined the World Bank's ZRF 2030 initiative which requires its national oil company to end routine flaring by 2030. In 2021, Ecuador signed the Global Methane Pledge at COP26, committing to a 30% reduction in methane emissions by 2030.[839] Regrettably, Ecuador's 2025 updated NDC did not include any plans to further curtail routine gas flaring.[840]

Fenceline communities have long called for more ambitious action. A grassroots collective called Eliminen los Mecheros, Enciendan la Vida (Remove the Flares, Ignite Life) has campaigned for years against routine gas flaring in the Amazon.[841] In 2020, a group of nine Amazonian girls and young women from the northeastern provinces of Sucumbíos and Orellana known as Guerreras por la Amazonía (Warriors for the Amazon, GxA),[842] together with the Unión de Afectados y Afectadas por Texaco (Union of People Affected by Texaco, UDAPT), filed a constitutional injunction against the state permits allowing public and private oil companies to operate gas flares.[843] Although initially dismissed,[844] the case culminated in a landmark ruling by the Provincial Court of Justice of Sucumbíos on 29 July 2021.



Leonela Moncayo, youth activist from the collective Guerreras por la Amazonía (Warriors of the Amazon) rallying a crowd outside the Constitutional Court in Quito (Ecuador), August 2024 © Private

The Court ruled that, by allowing the operation of gas flares, Ecuador disregarded the plaintiffs' right to live in a healthy and ecologically balanced environment, impaired their right to health, and breached its duty to mitigate climate change. It ordered reparations including the gradual elimination of gas flares by December 2030, prioritizing flares near populated areas to be removed within 18 months; environmental restoration and health studies of flare-affected areas; the creation of a cancer care centre; and an official apology to the plaintiffs and the broader Amazonian population.

The state-owned oil company, Petroecuador, arbitrarily determined that flares located more than 100m from a population centre did not need to be removed until 2030, despite evidence of harmful health and environmental effects over a distance of up to 5km.[845] In June 2023 the Ministry of Energy and Mines reported a total of 486 flares; 424 of which were operated by Petroecuador and 62 by private companies.[846] On 9 May 2024, Petroecuador claimed it had removed 145 flares since 2022.[847]

Amnesty International has independently verified that at least 52 gas flares remain within 5km of population centres in the affected regions.[848] Furthermore, some of the flares the company claimed to have removed had since been replaced.[849] Moreover, fenceline communities visited by Amnesty International in January 2024 reported that it was common practice for operators to regularly extinguish and re-ignite gas flares when state officials tour the area to verify compliance with the ruling.[850]

On 30 January 2025, Ecuador's Constitutional Court dismissed an extraordinary action for protection brought by GxA and UDAPT that aimed to ensure that the reparation measures ordered would be properly implemented, including through the removal of flares located close to population centres.[851]

According to the World Bank, Ecuador still ranked 16th globally in gas flaring volume in 2024.[852] President Daniel Noboa's government has announced plans to expand oil operations into southern parts of the Amazon, putting at risk more than 23,000km^2 of continuous forest and further threatening the human rights of fenceline communities.[853]

On 13 August 2025, GxA, UDAPT and the collective Eliminen los Mecheros, Enciendan la Vida filed a non-compliance action before the Constitutional Court of Ecuador, demanding the effective enforcement of the ruling they won in 2021.

C. WEST AFRICA

1. Senegal: A sanctuary in peril, impacts of fossil fuel exploration in the Saloum Delta

a) Senegal's new investment in fossil fuels

In recent years, Senegal has joined a growing number of sub-Saharan African countries in promoting oil and gas to boost the domestic economy.[854] Only 75% of Senegal's population has reliable access to electricity and the heavy reliance on oil imports makes its price among the highest in Africa.[855] There are currently three oil and gas projects underway in the country: the Greater Tortue Ahmeyim, the Yakaar-Teranga, and the Sangomar projects.[856]



Map of Senegal's oil and gas fields, 2018 © PETROSEN

b) Impacts of climate change in Senegal

Senegal is particularly vulnerable to the adverse impacts of climate change. While most of the country has a dry, desert climate, 70% of the population lives on the coast where fishing is a vital industry – 40% of the population's animal protein comes from fish.[857] Artisanal fishing makes up more than 84% of the economic value of the fishing sector.[858]



Artisanal fisher mending a fishing net in the Saloum Delta (Senegal), 2011 © Barry Lewis/In Pictures Ltd./Corbis via Getty Images

The Senegalese population is exposed to both slow and rapid onset effects of climate change, including rising sea levels, rising average temperatures, coastal erosion and flooding.[859] Senegal's 2020 NDC noted that the period from 1961 to 2010 saw a 0.58°C to 1.88°C increase in average temperatures across the country.[860] The World Bank estimates that, by the year 2100, average temperatures will have increased by 4.3°C.[861] Similarly, sea levels have been rising at an average rate of 1.4mm per year.[862] It is anticipated that, by 2100, the sea will have risen by nearly 1m,[863] causing 55 to 86km^2 of coastal beaches to disappear and 6,000km^2 of low-lying land to be flooded.[864]

Senegal has recognized these challenges in various national adaptation plans where it has laid out strategies to adapt to the medium- and long-term impacts of climate change.[865] It has also signed a multilateral Just Energy Transition Partnership (JETP) with the EU and other international partners wherein Senegal committed to achieving 40% renewable energy in the country's electricity mix by 2030.[866] Yet new offshore drilling exploration and the threat it poses to coastal fishing communities raises both climate and human rights concerns. Equally concerning is Senegal referencing fossil gas as a renewable energy source in its JETP.[867]

c) Methodology

In February 2025, Amnesty International researchers travelled to the Saloum Delta in west-central Senegal to scope out existing and potential human rights impacts associated with climate change and the Sangomar project on local communities. Researchers conducted individual interviews and focus groups with a total of 25 respondents including five government officials and representative of administrative authorities, five mayors and other local officials, and 15 representatives of local CSOs and artisanal fishers. Amnesty International shared its findings and addressed a series of questions to the Ministry of Energy, Mines and Petroleum, Woodside Energy and Wetlands in right of reply letters sent in October 2025. Woodside Energy Senegal replied to Amnesty International in two letters received the same month, as reflected in the following sections.

d) Saloum Delta

Listed among UNESCO's World Heritage sites,[868] the Saloum Delta is one of the world's largest wetlands, spanning 1,800km^2 and containing vast mangrove forests. The delta comprises more than 200 islands with unique biodiversity in bird, fish and plant life.[869]

Close to 15% of the world's mangroves are located in the Saloum Delta.[870] The Saloum Delta lost nearly a third of its mangrove cover from 1972 to 1986 due to human activity. Subsequently, large reforestation efforts partially restored the carbon reservoir.[871] Today, about 25% of the delta's mangrove is being sustained by REDD+ projects (reducing emissions from deforestation and forest degradation), undertaken by large companies in order to offset their own carbon emissions,[872] a practice largely condemned by climate justice CSOs as a harmful solution to climate change.[873] Despite these efforts, Senegal's 2020 NDC predicts that, by 2100, climate change and other environmental hazards will result in the complete disappearance of Senegal's mangroves.[874]



Aerial view of mangrove forest in the Saloum Delta (Senegal), January 2024 © Cem Ozdel/Anadolu via Getty Images

The Saloum Delta falls primarily within the administration of the Fatick region, home to 1 million people. Fishing, especially artisanal fishing, is a primary economic trade for inhabitants of the delta's 200 islands.[875] The mangroves themselves support more than 114 fish species, and 15,000 tons of fish and shrimp are produced annually.[876] This region is also known for the work of so-called femmes transformatrices ("women who transform") who collect crustaceans and molluscs near the shore and process fish products to sell.[877]

e) Impacts of climate change on livelihoods in the Saloum Delta

Local officials and affected groups interviewed by Amnesty International expressed concerns regarding climate impacts affecting the Saloum Delta. The mayoral office of Djirnda, for example, remarked that in the past 10 to 15 years there has been an increase in water volume, especially in the winter. They also noted an increase in salinization during the dry season.[878] Scientists have confirmed these phenomena, demonstrating that the level of salinization faced by the delta because of climate change and other anthropogenic activities is among the worst in the world.[879]

Increased salinization, rising sea levels and coastal erosion have significantly affected the lives of residents, causing them to build their homes further from the coastline and reducing arable land and crop yields. It has also affected local wildlife.[880]



Because of rising sea levels, many interviewees expressed fear that entire villages in the delta would disappear.[881] As the Mayor of Foundiougne explained: "In Foundiougne, the river has advanced 6m beyond the traditional shoreline. During the months of great flood [September to October], the waters flood some of the houses close to the shoreline."[882]

Tour guides from Sipo island in the Saloum Delta (Senegal) noted that the wooden fence pictured is where homes used to be built. Homes have been moved in response to the rising sea level. © Nisreen Khokhar

The increased scarcity of resources, particularly fisheries, is a common concern among fishing communities, local authorities and civil society. A representative of the Local Council on Artisanal Fishing (Conseil Local de Pêche Artisanale or CLPA) of the municipality of Djiffer told Amnesty International that, before 2010 "there was a large quantity and diversity of species in Djiffer and Palmarin [two fishing towns in the delta]. But there has been a notable decline in quantity and diversity in recent years."[883] The mayoral offices of Foundiougne and Djirnda both noted that resource scarcity is not only a local concern, but a broader national issue,[884] one that is also linked to overfishing and (often illegal) industrial activity.[885]

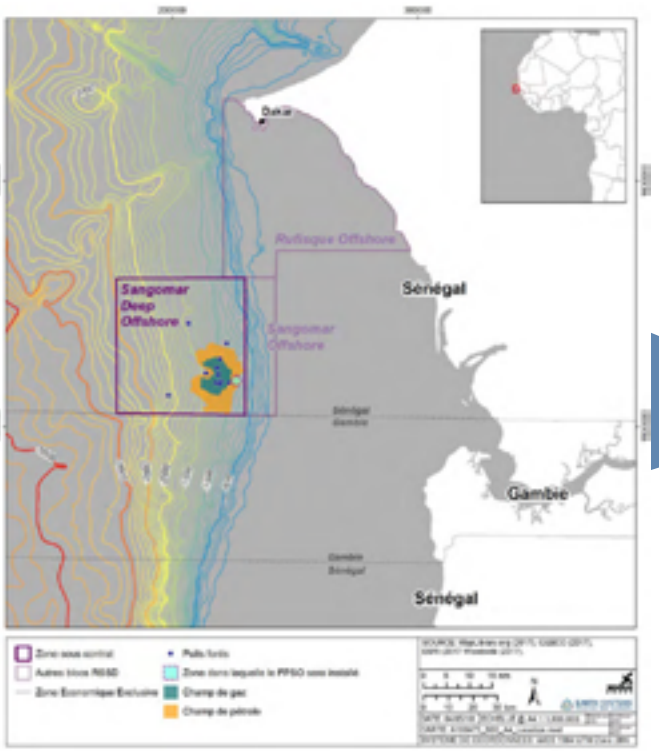


Artisanal fishers in the Saloum Delta (Senegal), August 2019 © Alaattin Dogru/Anadolu Agency via Getty Images

These environmental concerns are particularly challenging for coastal communities that rely on fishing for their livelihoods. As one member of the Women's Association of Dionewar told Amnesty International, their lives "depend on the ocean".[886] Another member explained: "We live off the sea and its fruits. That's how we live."[887]

These environmental changes have led some residents to move away from the delta.[888] The changes appear to particularly affect women in the artisanal fishing sector, many of whom collect crustaceans on the shore, rather than fishing from the sea, and participate in processing.[889] As a result, local authorities have increased efforts to re-skill artisanal fishers to explore alternative subsistence activities such as aquaculture.[890]

f) Sangomar project



Map excerpted from the Environmental and Social Impact Assessment of the Sangomar project © Woodside Energy

The Saloum Delta has become host to Senegal's first offshore oil and gas extractive field, the Sangomar project, which is located about 100km south of the country's capital, Dakar[891] and 90km offshore of the town of Djiffer.[892]

The Sangomar project is being developed by the Rufisque Offshore, Sangomar Offshore and Sangomar Deep Offshore (RSSD) joint venture, comprising Woodside Energy (Senegal) B.V. (Woodside) and Societé des Pétrôles du Sénégal (PETROSEN).[893] Woodside, a major Australian fossil fuel company, is the project operator and holds 82% of the participating interest in the project, while state-owned PETROSEN holds 18%.[894] The project was launched in early 2020 with the aim of extracting 100,000 barrels of oil per day. Production started in June 2024, with almost 13.3 million barrels of crude oil extracted that year.[895] Gas production is scheduled to begin in 2026.[896]

In addition to oil and gas operations, Woodside told Amnesty International that the company is developing a "carbon credits portfolio" by "restoring 7,000 hectares of mangroves in the Sine Saloum and Casamance regions".[897]

Woodside also shared that, in accordance with Senegal's local content regulations with which foreign companies must abide, the company created 4,400 jobs for Senegalese nationals at the peak of the Sangomar project's development phase.[898] However, the company acknowledged that, "in the oil and gas industry, job opportunities tend to decrease during the operations phase".[899]

In 2018, Woodside commissioned an environmental and social impact assessment (ESIA) to assess the foreseeable adverse effects of its oil-drilling operations, design a plan to mitigate them and serve as the basis of its engagement with potentially affected communities in the Saloum Delta. A copy of Woodside's ESIA is available on Woodside's website.[900] Among other concerns, the ESIA identified that:

(i) The project would affect marine biodiversity, including several endangered species;[901]

(ii) Oil, gas and other chemical leaks could affect the delta's mangrove;[902]

(iii) The project could particularly impact artisanal fishing including through zoning and could create risks of collision with industry vessels.[903]

The ESIA notes that Woodside held initial meetings with representatives of 57 coastal villages in the regions of Thiès and Fatick between March and April 2018 and carried out interviews with regional authorities.[904] The ESIA specifically states that Woodside would disclose information "in a manner that is easily accessible and readily understandable by all stakeholders. More specifically, technical information is communicated in an accessible format and in the languages spoken by the stakeholders concerned."[905] Furthermore, the ESIA provides that Woodside's management in Senegal "will need to ensure that sufficient resources are available to appropriately implement stakeholder engagement and disclosure activities associated with the development of the [Sangomar project]. A suitably qualified person will be appointed to oversee the implementation of stakeholder engagement activities, information disclosure, community support programs, compliance with formal grievance processes, and ensure continuous improvement".[906] According to Woodside, the Senegalese government provided "full approval" of the ESIA in 2019, before final investment decisions were made on the Sangomar project.[907]

Woodside told Amnesty International that, in 2019, the company also commissioned the non-profit CDA Collaborative Learning Projects to carry out a Human Rights Assessment.[908] While Woodside did not share a copy of its findings with Amnesty International, the company stated that the assessment "focused on the development phase of the Sangomar project" and noted that, as the company "transitions into the operations phase, a new assessment is scheduled to commence by the end of 2025 to ensure continued alignment with international standards".[909]

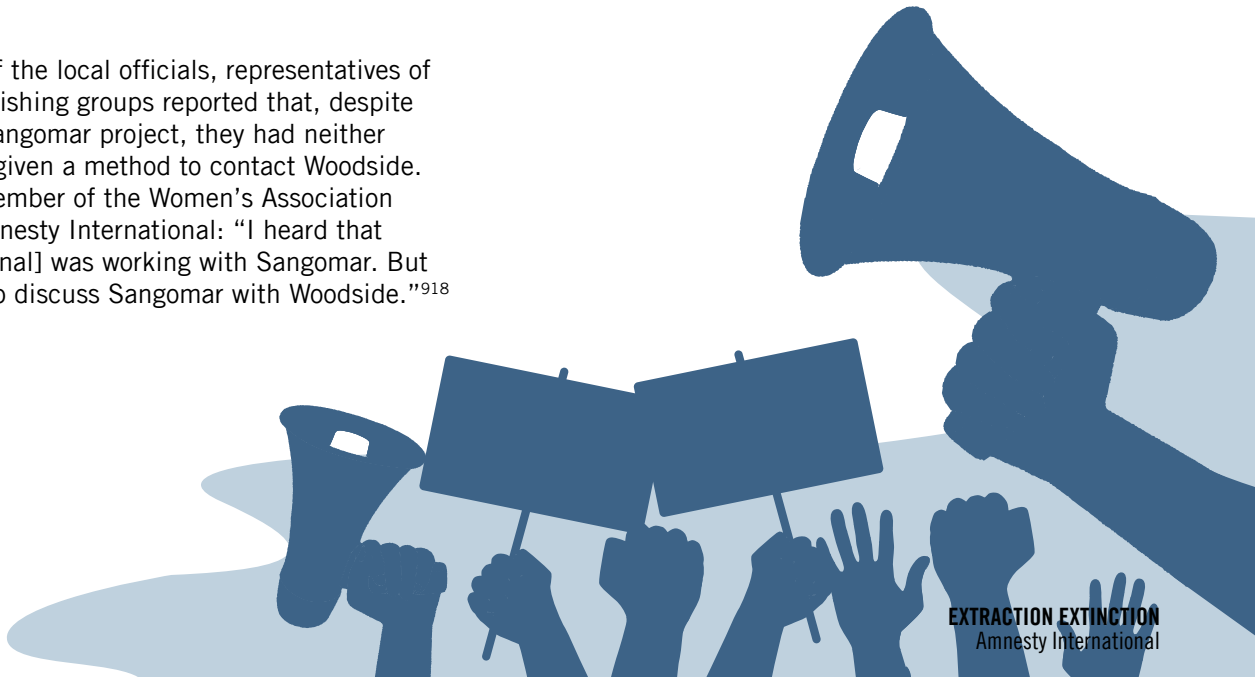
In 2021, Woodside partnered with Wetlands International, a non-profit that aims to conserve and restore wetlands such as the Saloum Delta's mangrove.[910] Woodside claims that its partnership with Wetlands International is "contributing to the restoration and conservation of mangroves in the Saloum Delta – situated adjacent to the Sangomar Field" and will "build the resilience of the communities that rely upon the mangrove ecosystems for economic and cultural activities."[911] According to Woodside, Wetlands International met with local communities in the Fatick region to discuss "planned restoration activities" and "sustainable income generating use of natural biological resources."[912] Woodside also told Amnesty International that the company has partnered with the non-profit Panafricare to deliver programmes for fishing communities in the regions of Thiès and Dakar, and with the grassroots association La Plateforme Sangomar (The Sangomar Platform) to facilitate community forums to discuss the company's "operational updates and potential environmental impacts".[913]

The Woodside Energy group-wide Sustainable Communities Policy provides that the company "builds long-lasting relationships with the communities in which we are active" by, among other things: "proactively engaging with our stakeholders;" "understanding and managing the social impacts associated with our activities;" and "contributing to host communities in ways that are of mutual benefit to Woodside and the community".[914]

g) Consultation and public participation

Regional authorities Amnesty International interviewed emphasized the importance of the Saloum Delta's marine ecosystem for artisanal fishers.[915] They also emphasized that Woodside's ESIA thoroughly evaluated the Sangomar project's impacts on the environment,[916] and stated that local communities living in and/or relying on the delta have been consulted.[917]

By contrast, many of the local officials, representatives of CSOs and artisanal fishing groups reported that, despite hearing about the Sangomar project, they had neither been consulted nor given a method to contact Woodside. For example, one member of the Women's Association of Dionewar told Amnesty International: "I heard that Wetlands [International] was working with Sangomar. But we never sat down to discuss Sangomar with Woodside."[918]



Representatives of the Federation of Actors for an Inclusive and Sustainable Governance of the Natural Resources of the Saloum Delta (Fédération des Acteurs pour une Gouvernance Inclusive et Durable des Ressources Naturelles du delta du Saloum, FAGIR/DS) told Amnesty International that Woodside's ESIA was presented to them for feedback. However, they criticized the methodology, which did not engage sufficiently with the diversity of actors active in the Saloum Delta, and the limited time given to the few individuals selected to provide feedback on the 800-page document. As one local official explained, many people felt pressured to move forward given the limited review time they were afforded and approved the ESIA without fully understanding it.[935]

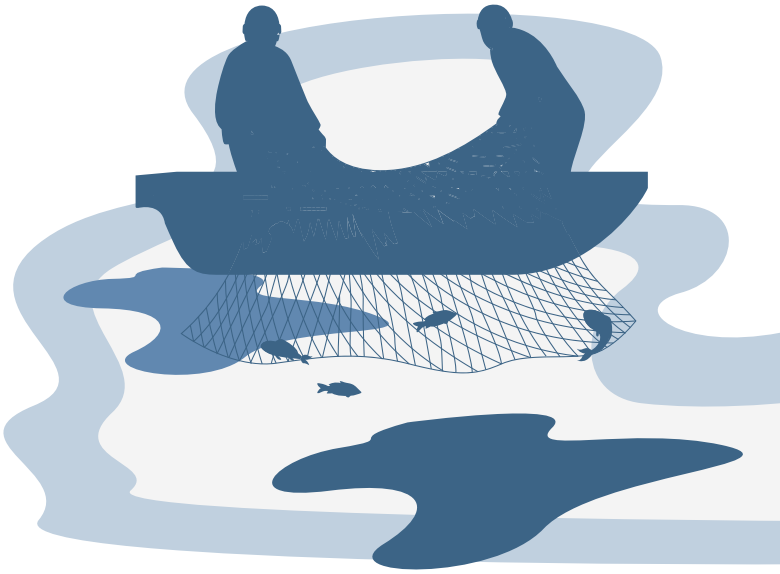
Mayoral offices expressed similar concerns and condemned the lack of connection between the ESIA and their own community development plans. In the town of Toubacouta, local officials noted that, although they had met Woodside representatives, the company did not take any follow-up action. In the words of one official: "We met with Woodside once in Fatick two years ago [in 2023]. They were supposed to facilitate a field visit of the platform, but that never happened."[936] The Mayor of Toubacouta found the lack of information concerning given the extent to which the Sangormar project may affect local residents. In his words: "in situations of danger, it is mayors who act as first responders [not Woodside]."[937]

h) Access to information

Woodside told Amnesty International that the company communicates environmental risks through "a range of targeted activities… aligned with IFC [International Finance Corporation] standards… carefully tailored to suit diverse audiences including local authorities, community groups, and other relevant stakeholders to ensure that the messaging shared is relevant, accessible, and effective in promoting awareness and informed participation".[938]

Among other things, Woodside stressed that the company holds yearly "regional development councils" in the regions of Dakar, Thiès and Fatick, "bringing together governors, mayors, and community-based organisations to discuss development priorities and share updates on our activities".[939] Woodside also highlighted that the company holds annual sessions with each regional CLPA "to provide detailed updates on the Sangomar project, ensuring transparency and continued collaboration with the fishing sector".[940] Furthermore, Woodside told Amnesty International that it conducts "four community forums each year" and "maintain[s] regular engagement at various fishing quays" in partnership with CLPAs. The company claims that the information sessions it holds with fishing communities along the coasts of Dakar, Thiès and Fatick provide "technical updates and information on grievance mechanisms in formats that are accessible and delivered in local languages such as Wolof".[941] The company noted that, to facilitate "direct and real-time communication", Woodside had created a WhatsApp group with representatives from all CLPAs and local administration officials.[942]

By contrast, local officials, representatives of CSOs and artisanal fishing groups expressed deep confusion and reported lacking accessible information about the Sangomar project, its potential socio-environmental impacts, and mitigating measures taken by Woodside. Many expressed enthusiasm and interest about the potential employment and economic opportunities the Sangomar project may bring, as well as a desire to engage with Woodside and learn more about how their project can benefit their community.[943] Members of Djiffer's CLPA clearly stated, for example, that its members "want to sit and discuss with Woodside" but did not know how to contact the company.[944] Other organizations including FAGIR/DS have said that "for us, direct dialogue with Woodside is a priority".[945]



Local officials interviewed by Amnesty International mentioned difficulties in communicating with the company, including language barriers. Some reported that Woodside's representatives speak English, a language not accessible to the majority of local officials and representatives of local CSOs.[946] Local officials also complained about what they perceived as Woodside's reliance on Wetlands International as an intermediary in its engagement with potentially affected communities. For example, a local official in Foundiougne told Amnesty International that Wetlands International works with Woodside but "without discussing with local communities".[947] A local official in Toubacouta remarked: "[Woodside] does whatever it wants… [Woodside has] the power to speak with us but we don't even know where to start."[948]

Interviewees from local CSOs shared similar concerns. The president of FAGIR/DS, for example, explained: "Woodside doesn't work with us. They sub-contract their engagement with the community… they use an NGO as an intermediary with communities. [Yet] Wetlands does not work with everyone."[949] For them, this lack of engagement from the operator is highly concerning as: "Wetlands will leave but we [civil society]… will remain."[950]

Local officials and CSOs expressed not fully knowing or understanding the impacts of the Sangomar project, in part due to the length and technical nature of the ESIA. For example, a local official in Toubacouta told Amnesty International: "To tell you the truth, I cannot say what the impacts or even the effects of oil exploitation will be. We cannot measure them."[951] He noted that the effects on agriculture and fishing remained unclear but said, "we prepare ourselves in anticipation of negative effects."[952]

i) Environmental risks

At the time of conducting the interviews with artisanal fishers, the main restriction that affected them was the 500m exclusion zone surrounding the oil and gas platform, which Woodside refers to as the "Safety Zone" and which, for security purposes, artisanal fishers are forbidden from entering.[953]

The ESIA identified the following as among the main impacts and risks requiring regular assessments:[954]

- Seabed disturbance and loss of seabed habitat;
- Underwater noise pollution;
- Physical presence of vessels and underwater infrastructure;
- Atmospheric emissions;
- Discharges at sea;
- Waste production;
- Risks of accidental spills.

Among these, the risk of accidental spills is described as the most serious. To mitigate this risk, the ESIA provides that Woodside "incorporated safeguards into the design of the facilities and the installation and operational stages to reduce the risk of accidental oil spills".[955] The ESIA also states that "preliminary conclusions from the oil spill risk assessment indicate that the design, installation and normal operation of the proposed [Sangomar project] appear manageable within ALARP [as low as reasonably predictable] limits".[956]

The mayor of Foundiougne explained that, because the Sangomar project is built at the mouth of the Saloum River, the consequences of an oil spill would be "catastrophic" for artisanal fishers.[957] A member of the Women's Association of Dionewar told Amnesty International that, in certain towns, there is a growing "fear of the dangers of oil".[958] Djirnda's mayoral office also stressed that: "On the islands, oil exploitation risks not only affecting the economy but [residents'] lifestyles,"[959] emphasizing the importance of mitigation measures and re-training programmes.



Prawn fishers in the Saloum Delta (Senegal), January 2023 © John Wessels/AFP via Getty Images

In response to the concerns expressed by potentially affected groups, Woodside told Amnesty International that all mitigation measures outlined in the ESIA were implemented and monitored by the National Technical Committee of Senegal's Department of the Environment and Protected Sites.[960] However, the company's past and ongoing engagement with regulators may raise conflict of interest concerns. Indeed, in publicly available newsletters, Woodside boasts its commitment to "developing and strengthening the capacity of the Senegalese Government institutions responsible for the environmental regulation of the oil and gas industry".[961] Since the beginning of its drilling operations, Woodside reports holding several capacity-building workshops with the Department of the Environment and Protected Sites.[962]

Woodside claims that it completed the development phase of the Sangomar project "without any adverse impacts" and that many environmental risks have become "residual in nature".[963] More specifically, the company stressed that "the risk of oil spills was more significant during the development phase of the project. Now that we are in the operations phase, this risk is considerably lower due to enhanced control over oil flow".[964]

j) Conclusion

Climate change mitigation. Senegal's increasing investment in the oil and gas sector contravenes the duty of all states to phase out fossil fuels, undermining Senegal's just transition efforts and risking locking the country's economy on a path to fossil fuel dependency.

Access to information and consultation. Interviews conducted by Amnesty International in the Saloum Delta raise concerns regarding the dissemination of accessible information by national and regional authorities and Woodside, as the operator of the Sangomar oil and gas field. Such information concerns the wide range of potential human rights and environmental impacts of the Sangomar project, particularly on artisanal fishing communities who rely on delta's marine ecosystem for subsistence. While Woodside claims to have consulted potentially affected groups, fenceline communities and local authorities to whom Amnesty International spoke condemned the lack of direct channels of communication with Woodside and expressed confusion about the Sangomar project's environmental and socio-economic risks. This suggests possible shortcomings in the consultation process and mitigating measures outlined, indicating a need for meaningful consultation with all potentially affected rights-holders and greater access to information. While more research is necessary, these known gaps risk undermining the right of access to information and participation of fenceline communities who may be affected by Woodside's operations in the Saloum Delta.

2. Nigeria: Call for reparations after decades of oil pollution in the Niger Delta

Since the 1990s, Amnesty International and its partners[965] have documented and amplified the calls for justice by communities in the Niger Delta against oil giants and Nigerian authorities.[966]

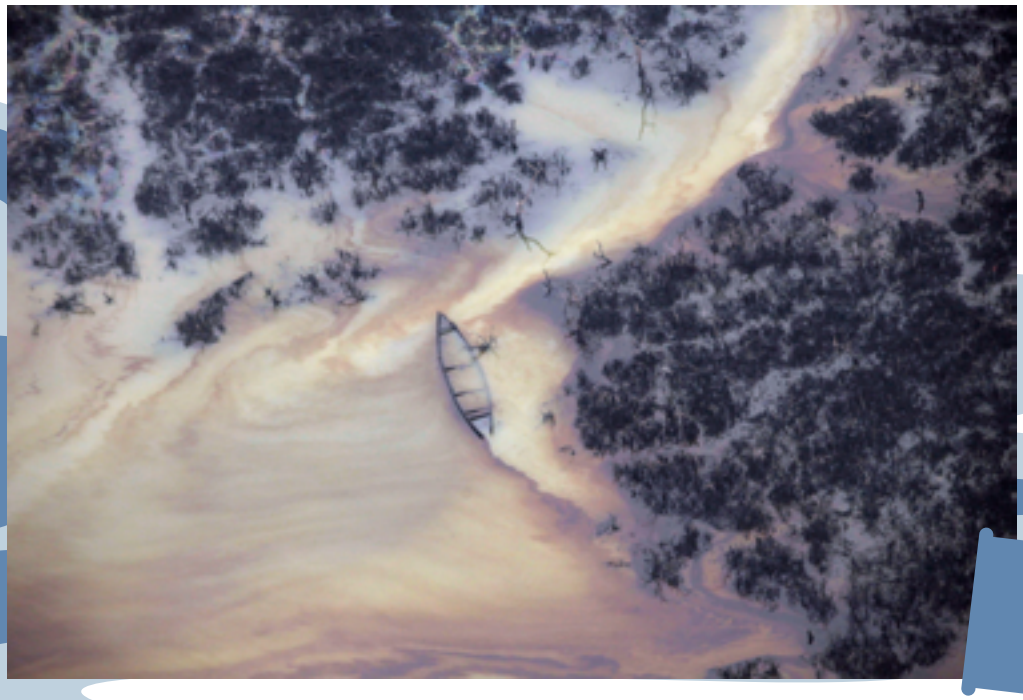
In 1956, Shell first discovered oil in commercially viable quantities in Nigeria, when the country was still under British colonial rule. Before long, Shell operated more than 1,000 wells in 90 oil fields covering an area of 31,000km^2 across the Niger Delta. During the 1990s, Shell reported that its annual profit from oil production in Nigeria averaged USD 220-240 million, some 7% of Shell's total worldwide profits from exploration and oil production.[967]

Within the Ogoniland region alone, Shell operated 96 wells in five oil fields and was able to produce 28,000 barrels a day. The environmental degradation caused by their operations drove protests by the Ogoni people, led by writer and activist Ken Saro-Wiwa.

In November 1993, General Sani Abacha seized power in a military coup. General Abacha banned all political activity, replaced civilian governors with military administrators, jailed and executed opponents. An Internal Security Task Force was created to "restore and maintain law and order in Ogoniland" and immediately responded to community-led protests in the Niger Delta with excessive use of force and other human rights violations. Amnesty International has documented Shell's involvement in human rights violations in Nigeria and its close relationship with the Nigerian military.[968] Amnesty International's research revealed that Shell executives met regularly with top government officials during this period and discussed the government strategy for dealing with protesters in Ogoniland.

In October 1995, nine Ogoni men including Ken Saro-Wiwa were convicted and sentenced to death in relation to trumped up charges of incitement to murder. They were hanged 10 days later; their bodies dumped in an unmarked grave. Five days later, Shell launched a new USD 4 billion natural gas joint venture with the Nigerian government. The executions of the Ogoni Nine sparked outrage around the world.

The Niger Delta has become Africa's most valuable oil-producing region. For more than five decades, Shell and other international oil giants have earned billions of US dollars from their operations in the delta,[969] while local communities including the people of Ogoniland have struggled against oil pollution and the destruction of their ecosystem.[970] Every year, hundreds of oil spills irreversibly devastate the Niger Delta, caused by old and poorly maintained pipelines or criminal activity such as oil theft. These spills, which operators have consistently failed to adequately clean up, have a devastating impact on the fields, forests and fisheries on which the majority of the people in the region depend for their food and livelihoods. Oil spills also contaminate drinking water and expose people to serious health risks.[971] Amnesty International's research has revealed how oil extraction in the Niger Delta, and Shell's operations in particular, have turned the region into a sacrifice zone.[972]



Oil on a creek water's surface near an illegal oil refinery in Ogoniland, outside Port Harcourt, Niger Delta (Nigeria), 2011 © AP/Sunday Alamba/Alamy

In March 2025, Shell completed the sale of its Nigerian subsidiary Shell Petroleum Development Company (SPDC) to a consortium of five companies, four of which are based in Nigeria.[973] Despite international calls for Shell to complete a clean-up of decades of environmental degradation,[974] complaints have continued to the present day. The Ogale and Bille communities and the Bodo community have brought cases against Shell in the UK courts, successfully arguing that Shell should be held legally responsible for actions taken by SPDC.[975] The Ogale and Bille communities' case against Shell and Renaissance, the company to which Shell sold its majority stake in March 2025, is expected to come to trial in March 2027.[976] The Bodo community settled out of court with Shell in 2014 and then entered a remediation process in 2015 regarding the clean-up of pollution from a significant oil spill in 2008. Shell has yet to fully clean up Bodo's polluted waterways. As a result, the case was brought back to court in May 2025 following this failure in the remediation process.[977] A court ruling on the Bodo case regarding remediation of the oil spills is expected to be issued in late 2025.



In Port Harcourt, (Nigeria,), activists, CSOs and Amnesty International call on Shell to own up, pay up and clean up the Niger Delta, as part of a week of action in April 2012. © Amnesty International

In October 2024, Amnesty International researchers visited the Ogale and K-Dere communities. Simple excavations revealed a thick layer of oil below the soil surface. Rainwater could also be seen carrying the oil pollution directly into a nearby creek. This was despite a new clean-up operation run by the Hydrocarbon Pollution Remediation Project, a government agency funded by Shell and other oil companies, taking place more than 50 years after an oil spill occurred in this location, and 10 years since Shell claimed to have fully cleaned the site.[978]

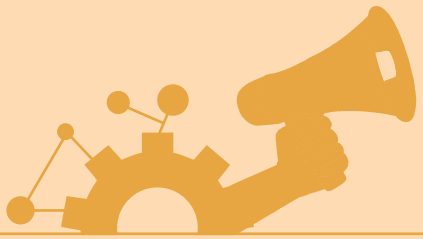
This evidence shows that the devastating effects of oil pollution continue to place a terrible strain on the livelihoods of fenceline communities in the Niger Delta.

12
CONCLUSION



This research by Amnesty International and its partners illustrates the severe and multidimensional harm the continued extraction, processing and transportation of fossil fuels causes to the climate, people and critical ecosystems. Despite the industry's efforts to suggest otherwise, fossil fuel projects across the world are driving climate chaos, undermining human rights and leading to irreversible environmental degradation. They threaten the right to self-determination of Indigenous Peoples and the cultural survival of traditional communities, turn fenceline communities into sacrifice zones, and destroy irreplaceable ecosystems that are essential to mitigating climate change. As a result, states should be embarking urgently on a fast, fair and funded phase out of fossil fuels, and a transition to renewable energy that leaves no one behind. States' mitigation plans should form part of wider just transition policies towards environmentally sustainable economies and societies, creating decent employment opportunities, reducing inequalities and poverty, and enhancing and upholding all human rights.[979]

13
RECOMMENDATIONS



The following section outlines key recommendations for all states, UNFCCC parties, and the state and corporate actors expressly named in this report. In addition, Amnesty International endorses and urges states and businesses to implement recommendations outlined by the UN Special Rapporteur on climate change in her 2025 report, *The Imperative of Defossilizing Our Economies*,[980] and in the UN Secretary-General's *Synthesis Report on Opportunities, Best Practices, Actionable Solutions, Challenges and Barriers Relevant to Just Transition and The Full Realization of Human Rights for All People.*[981]

A. RECOMMENDATIONS TO ALL STATES



- Commit to a full, fast, fair and funded fossil fuel phase out, across all sectors, without relying on risky and unproven technologies or offsets that do not lead to genuine GHG emissions reductions.
- High-emitting states, according to their historical responsibility, current contributions and respective capabilities, should completely phase out fossil fuels by 2030.
- Prohibit new fossil fuel exploration and exploitation, as well as any expansion of existing fossil fuel infrastructure.
- Eliminate fossil fuel subsidies and tax incentives, while ensuring affordable and sustainable energy for all. States should also ensure that the elimination of subsidies and incentives do not result in higher costs for low-income consumers, including by introducing appropriate social protection mechanisms to compensate as necessary.
- Adopt and implement corporate and environmental laws and policies to prevent and mitigate the environmental and human rights impacts of fossil fuel and other extractive projects.
- Allocate adequate resources at national, regional and local levels to carry out ongoing monitoring of environmental and health impacts of fossil fuel projects, with the input of fenceline communities, throughout their lifecycle.
- Endorse the call to adopt and implement a Fossil Fuel Treaty.
- Join the Beyond Oil and Gas Alliance and the Powering Past Coal Alliance, two global level alliances of governments and other stakeholders working together to advance the global phase out of fossil fuels.
- Prevent and protect against human rights abuses by corporate actors, investigating allegations of corporate-related human rights abuses and holding corporate actors accountable when abuses have occurred.
- Ensure meaningful participation by affected individuals and groups, including workers, Indigenous Peoples, traditional communities, land-dependent peasant communities, racialized groups and ethnic minorities, women and girls, children, youth and older people, people with disabilities, people experiencing poverty and other marginalized groups, throughout the design and implementation of fossil fuel phase out and just transition policies.
- Guarantee the comprehensive protection of environmental human rights defenders, including physical, psycho-social and digital safety and security in accordance with their needs and wishes, adopting a gender, anti-racist, intersectional and collective approach.

- Take all necessary measures to ensure a safe and enabling civic space where environmental human rights defenders can fully exercise their human rights without fear of reprisals and actively support their contributions to national and regional climate and environmental policy making.

- Cease the misuse of criminal, civil and administrative procedures against environmental human rights defenders.

1. To Parties to the UNFCCC and the Paris Agreement

- Urgently develop new human rights-compliant NDCs that include clear pathways for an urgent and equitable phase-out of all fossil fuels in line with the 1.5°C limit before 2050, with significant reductions to be achieved to reduce GHG emissions by at least 43% (and CO_2 by at least 48%) by 2030 compared to 2019, with high-income, historically high emitters, other high-emitting G20 countries, and other high-income fossil fuel producers going furthest and fastest.

- Protect civic space, including at UNFCCC meetings, for civil society, Indigenous Peoples, traditional communities, land-dependent peasant communities, racialized groups and ethnic minorities, women and girls, children, youth and older people, people with disabilities, people experiencing poverty and other marginalized groups from all countries to be able to participate meaningfully and strengthen protections for environmental human rights defenders.

- Ensure that the Baku to Belém Roadmap, due to be finalized at COP30, clearly outlines how all states in a position to do so will massively scale-up needs-based climate finance, particularly for adaptation and loss and damage, in the form of grants, not loans, with those most responsible for emissions contributing the most.

2. To the Government of Brazil and the state of Rio de Janeiro

- Review and halt the expansion of fossil fuel exploration by suspending new auctions and licences, especially in areas including at the mouth of the Amazon, where exploration threatens Indigenous Peoples, traditional communities and critical ecosystems.

- Adopt integrated policies to protect the human rights of Indigenous, quilombola and traditional communities, and strengthen the protection of environmental human rights defenders.

- Ratify the Escazú Agreement to ensure transparency, participation, and the safety of environmental human rights defenders, particularly from marginalized groups.

- Strengthen the capacity and resources (human and technological) of the Environmental Agency of the state of Rio de Janeiro INEA to monitor the activities of the fossil fuel industry in real-time, to reduce environmental impacts on Guanabara Bay and the traditional communities that rely on its watershed.

- Protect the rights of artisanal fishing communities in Rio de Janeiro, ensuring access to culturally recognized artisanal fishing spaces and safeguarding them from damage caused by the fossil fuel sector's expansion.

3. To the Government of Canada and the province of British Columbia

- Immediately halt the construction of the proposed compressor stations and the operation of the Coastal GasLink pipeline. Suspend all permits and approvals for the CGL pipeline in the unceded territory of the Wet'suwet'en Nation and ensure that operations are not resumed without the free, prior and informed consent of the Wet'suwet'en Hereditary Chiefs and their clans in order to avert violations of Indigenous Peoples' rights to self-determination and cultural rights, as well as their rights to health and healthy environment.

- Immediately drop the criminal contempt charges against Wet'suwet'en and other land defenders whose trials have not yet begun.

- Implement all recommendations published in Amnesty International's 2023 report on the criminalization of Wet'suwet'en land defenders.[982]

4. To the Government of Senegal

- Strengthen corporate and environmental domestic laws and policies and allocate adequate resources at national, regional and local levels to prevent, monitor and mitigate the potential environmental and human rights impacts of fossil fuel exploration and expansion. Disseminate information and solicit the ongoing engagement of individuals and groups that risk being affected by the Sangomar project.

- Urge Woodside Energy, PETROSEN and regional authorities to carry out ongoing environmental and human rights due diligence, soliciting the input of affected groups and disseminating accessible information to fenceline communities in the Saloum Delta (including mayoral offices, local associations and fishing cooperatives), on the impacts of the Sangomar project, and develop and implement comprehensive preventative measures protecting the livelihoods of the residents of the Saloum Delta.

B. RECOMMENDATIONS TO ALL FOSSIL FUEL COMPANIES

- Ensure operations do not harm human rights or the environment by assessing salient risks, proactively taking preventative measures, restoring areas where environmental harm has occurred and sustainably rehabilitating sites once extraction, transportation or processing of fossil fuels have ceased.

- Conduct genuine and meaningful consultations with all potentially affected rights-holders, including marginalized groups, at critical phases of project planning, implementation, monitoring and rehabilitation.

- Ensure full respect for Indigenous Peoples' rights, including their right to self-determination and free, prior and informed consent in all project phases, and suspend activities where such consent has not been properly obtained or where dissent has led to violence.

- Work in equal partnership with fenceline communities to prepare health, social, environmental and biodiversity impact assessments, avoid any impacts on critical ecosystems, and remediate or mitigate to the fullest extent possible any other adverse impacts, while respecting and maintaining fenceline communities' place within and relationship to nature.

- Disclose in a timely manner all relevant information about project development, expansion or termination and rehabilitation, including relevant project documents and all potential negative effects on human rights and the environment. Ensure information is accessible and made available in the language(s) of potentially affected groups prior to consultations.

- Wherever human rights abuses associated with the company's activities have been identified, provide effective individual, and where applicable, collective remedies.

- Commit to and put in place specific plans to reduce emissions across all operations and value chains as soon as possible and by at least 43% by 2030 (compared to a 2019 baseline) and to zero before 2050, in line with the recommendations of the IPCC.

- Expeditiously phase out the production and use of fossil fuels including by shifting investment portfolios towards renewable energy produced in a human rights-consistent manner.

- Refrain from propagating harmful narratives and initiating groundless legal accusations or proceedings against environmental human rights defenders or reporting them to authorities as a means of intimidation.

1. To all companies named in this report

- Immediately investigate and address human rights and environmental risks and abuses documented in this report, in good faith, and in consultation with affected individuals and groups, and provide effective remedy where adverse impacts have been identified.

- Reparations should reflect not only individual losses but also the broader cultural, environmental, and social impacts experienced by fenceline communities collectively. Reparations should also take into account communities' demands for adequate compensation, allocation of funds for ongoing environmental and health monitoring as well as treatment and provide guarantees of non-repetition.

2. To CGL, TC Energy and other operators of the CGL pipeline

- Immediately halt the construction of the proposed compressor stations and use of the Coastal GasLink pipeline in the unceded territories of the Wet'suwet'en Nation and conduct adequate environmental and human rights due diligence with the view to ceasing operations and planning for a responsible disengagement from the territory. Ensure that operations are not resumed without the free, prior and informed consent of the Wet'suwet'en Hereditary Chiefs and their clans in order to avert violations of Indigenous Peoples' right to self-determination and cultural rights, as well as their rights to health and healthy environment.

- Implement all recommendations published in Amnesty International's 2023 report on the criminalization of Wet'suwet'en land defenders.[983]

3. To Petrobras

- Repair the damage caused by past and new oil and chemical spill incidents associated with Petrobras' operations that have been harming artisanal fishing communities throughout Guanabara Bay, including those affected by the 2000 spill who have not received reparations to date.

- Comply with corporate and environmental laws and policies, abandoning tactics such as spreading disinformation and seeking to influence regulatory rule making and oversight.

- Increase resources to carry out ongoing environmental and health monitoring and mitigate the impact of fossil fuel activities, particularly oil spills, on Guanabara Bay and the communities that rely on its watershed for their livelihoods.

- Immediately halt offshore drilling exploration at the mouth of the Amazon River.

- Suspend self-licensing practices and transition away from fossil fuels, redirecting investments to renewable sources of energy produced in a human rights-consistent manner, reducing negative impacts on marginalized communities and natural ecosystems, including offshore.

4. To Woodside Energy

- Re-engage and strengthen channels of communication with fenceline communities at risk of potential environmental and socio-economic harm associated with the Sangomar project particularly regarding preventative measures and mitigation strategies outlined in the Environmental and Social Impact Assessment.

- Strengthen available methods to disseminate accessible information about the Sangomar project to fenceline communities, particularly artisanal fishers and local officials in the Saloum Delta, potentially affected by its operations and planned expansion.

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its decisions; while Canada, though not a party to the American Convention, should abide by the jurisprudence of the inter-American system as a member of the OAS. Regional human rights bodies, such as the IACtHR, play a critical role in interpreting and progressively developing international law, particularly by strengthening state accountability and reinforcing protections for individuals and communities whose rights are at risk.
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EXTRACTION EXTINCTION

WHY THE LIFECYCLE OF FOSSIL FUELS THREATENS LIFE, NATURE AND HUMAN RIGHTS

Climate change is an unprecedented global human rights emergency, caused primarily by burning fossil fuels that emit greenhouse gases. Global concentrations of these heat-trapping gases have reached record levels. In 2024, for the first time, the global average temperature exceeded 1.5°C above pre-industrial levels.

Despite commitments made under international climate agreements and repeated calls by the UN to urgently phase out fossil fuels, government actions to limit them and stem the flow of subsidies to the fossil fuel industry have been wholly inadequate. Meanwhile, the industry is intensifying efforts to lock in profits, disinform, and exert undue influence in climate policy forums.

This report maps the global scale of risks to human rights and critical ecosystems from existing and planned fossil fuel infrastructure. Data analysis by Better Planet Laboratory is presented alongside new, in-depth research and snapshots of ongoing campaigns across the Americas and West Africa, showing the devastating effects of fossil fuel exploration, production, transportation and decommissioning on fenceline communities and the ecosystems on which we all rely.

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