

#### **ACKNOWLEDGEMENTS**

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#### **Endorsed By:**





























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#### THE IMMINENT THREAT OF OIL AND GAS EXPANSION IN AFRICA

This report spotlights how oil and gas expansion in Congo Basin Countries is an existential threat to the global climate and to the world's second largest rainforest and the thousands of communities that call it home.

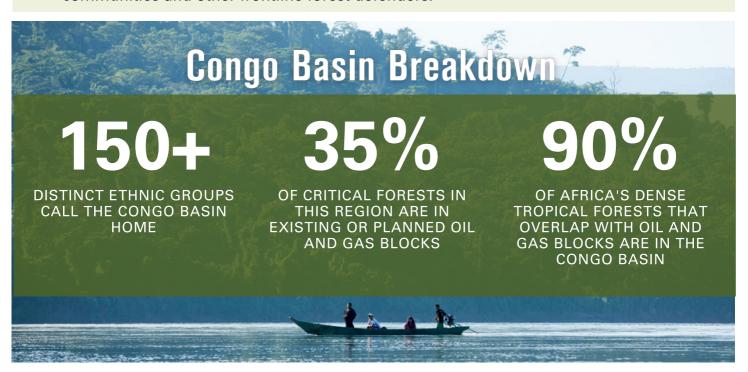


Chad-Cameroon pipeline. Source: Tom Stoddart/Getty Images

The International Energy Agency (IEA) has stated that to limit global warming to within the threshold of 1.5°C above pre-industrial levels and get to net-zero emissions by 2050, no further fossil fuel expansion must take place.¹ Unfortunately, the threat of oil and gas expansion on a continental scalein Africa is happening at an alarming pace – most often against the wishes of local communities who suffer most from the inherent costs of pollution, corruption, human rights violations and deforestation that accompany this kind of extractive development.

#### **KEY FINDINGS**

- Despite the need to end oil and gas expansion globally, the area of land allocated to oil and gas production on the African continent is set to quadruple.<sup>2</sup>
- Oil and gas exploration blocks overlap 30% of dense tropical forests in Africa, of which 90% are in the Congo Basin.<sup>3</sup>
- In the Congo Basin, over 180 million hectares of dense tropical forests still remain and over 35% of these critical forests, or 64 million hectares, now overlap with over 150 existing or designated oil and gas blocks (an area nearly twice the size of Germany).<sup>4</sup>
- Over 150 distinct ethnic groups call the Congo Basin home and over 35 million people, or 20% of populated places in Congo Basin countries<sup>5</sup>, are now in existing or designated oil and gas blocks.
- A close examination of oil development that has already occurred in the DRC and also in Nigeria reveals disastrous impacts on the environment, health, livelihoods and human rights of local communities and is a cautionary tale for the Congo Basin.
- There is still time for African nations and the international community to
   chart a different path that advances economic well-being while protecting critical
   forests and the communities that depend on them. Key investments include unlocking
   the continent's vast potential in renewables and scaling up direct support to forest
   communities and other frontline forest defenders.



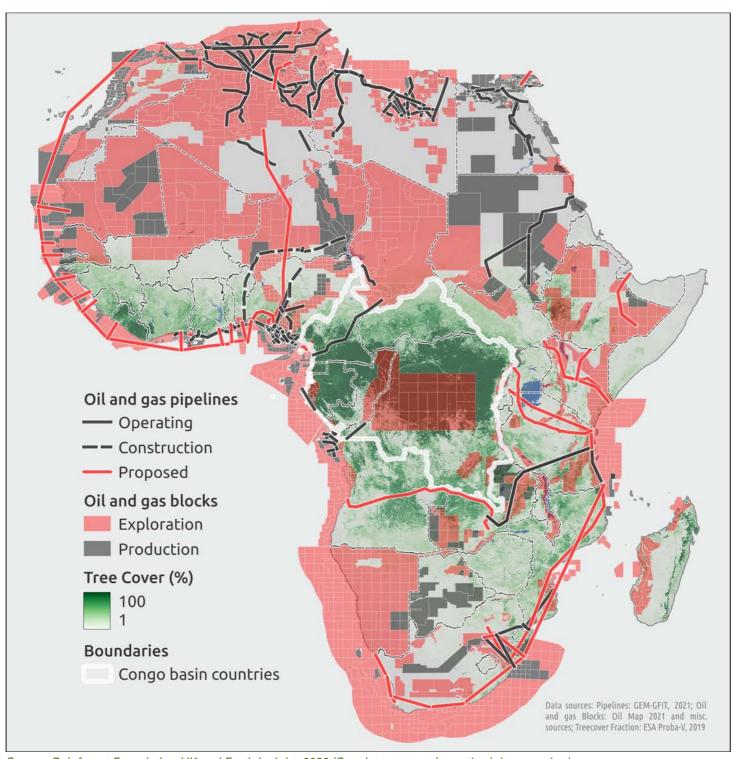
<sup>2</sup> Based on analysis showing existing production blocks covering 9.5% of total land area and proposed oil and gas blocks at 37.7%.

For the purposes of this report the Congo Basin refers to the dense tropical forest covering six Central African countries: Cameroon, Central African Republic, Democratic Republic of the Congo, Republic of the Congo, Equatorial Guinea, and Gabon.

<sup>4</sup> See detailed methodology section in Annex. 64 million hectares is equivalent to 640,000 sq. kilometres - approximately 1.8x the size of Germany.

<sup>5</sup> Based on gridded population total of of over 183 million people.

#### **MAP 1: CONTINENTAL SCALE THREATS**



Source: Rainforest Foundation UK and Earth Insight, 2022 (See data sources in methodology section)

The scale of oil and gas expansion in Africa is immense. At present, approximately 9.5% of the total land area is already under oil and gas production blocks. More than 37.7% of the continent is under proposed oil and gas blocks - representing a potential fourfold increase in the total land area in which oil and gas expansion may take place.

#### **CRITICAL FORESTS AT RISK**

Dense tropical forests are increasingly rare places on the planet that are vital for climate stability, biodiversity and the Indigenous and forest-dependent communities who steward and live within them. A host of industrialscale extractive activities threaten the future of forests and their inhabitants in Africa and globally. Oil and gas "development" is often a gateway to deforestation and carries a heavy price of toxic pollution that impacts local communities' and Indigenous Peoples' health and livelihoods. Over 30% of Africa's current oil and gas exploration blocks are located in Africa's dense tropical forests nearly 74 million out of 240 million hectares in total - and the majority of these critical forests are in the Congo Basin - the world's second largest tropical forest after the Amazon.

#### Congo in the Crosshairs: What's at Stake

Spanning approximately 200 million hectares (500 million acres), an area roughly 1/4th the size of the contiguous United States, the dense tropical forests and wetlands of the Congo Basin are vital for its people, wildlife, and the future climate stability of the planet. According to the World Bank, it is the largest carbon sink in the world, absorbing even more carbon than the Amazon. Until recently it has suffered from lower deforestation rates than other tropical forest regions but pressures are increasing from agribusiness, extractive industries, associated infrastructure projects and much more.

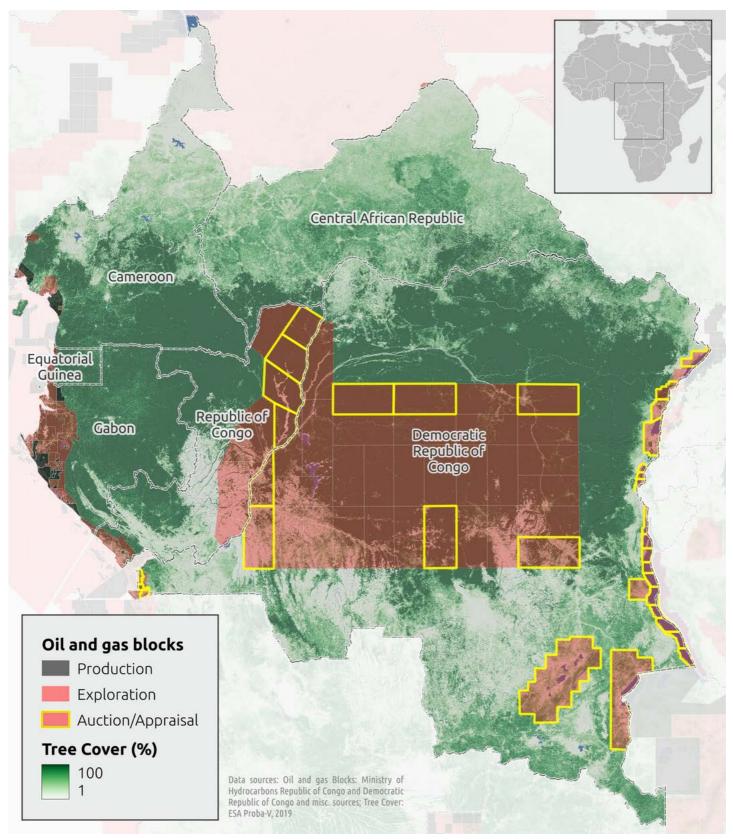
The forest overlaps six countries – Cameroon, Central African Republic, Democratic Republic of the Congo, Republic of the Congo, Equatorial Guinea, and Gabon. This diverse

landscape contains dense tropical forests as well as riverine systems, savannahs, and swamp forests supporting thousands of species of tropical plants and birds and an incredible range of unique and endangered wildlife from forest elephants and chimpanzees to mountain gorillas and hundreds of species of mammals including many that are IUCN red-listed. These forests sustain tens of millions of people hundreds of thousands including Indigenous People, many of whom maintain a semi-nomadic existence. The cultural diversity of the region is evident in the hundreds of distinct ethnic groups whose rich heritage and traditions are interwoven within this unique landscape. They are among the poorest and most marginalised people on earth lacking access to basic state services, without energy security and already feeling the impacts of climate change.



Image credit: Rainforest Foundation UK

# MAP 2: OIL AND GAS THREATS TO DENSE TROPICAL FORESTS AND OTHER CRITICAL LANDS IN THE CONGO BASIN



Source: Rainforest Foundation UK and Earth InSight, 2022 (See data sources in methodology section)

The Congo Basin contains 90% of Africa's dense tropical forests that overlap with oil and gas blocks making the region the epicentre of oil and gas expansion threats to dense tropical forests on the continent, and likely the world.

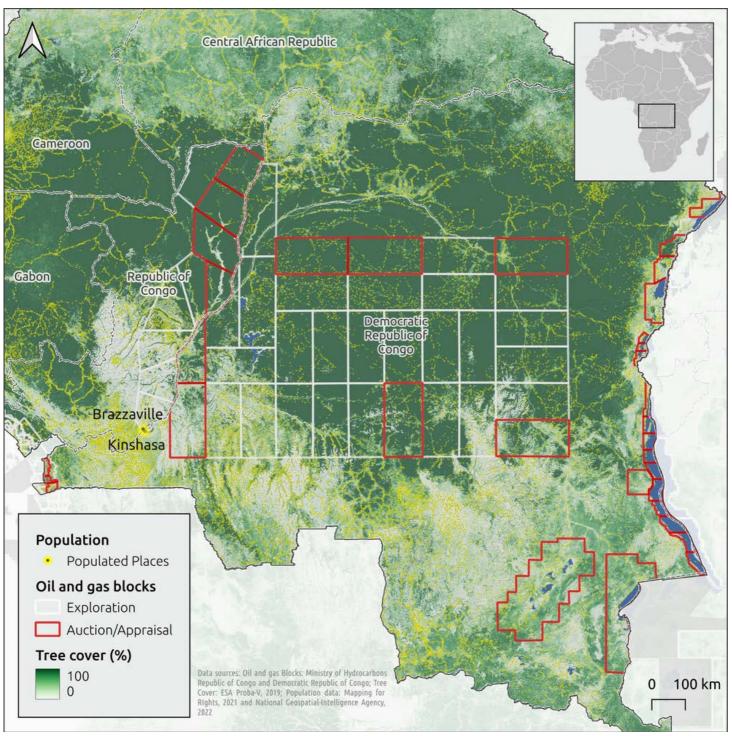
Oil and gas expansion in the Congo Basin threatens to further fragment intact lands and exacerbate forest and wetland degradation and deforestation in the region. Over 180 million hectares of dense tropical forests remain in the region and over 35% of these forests, or 64 million hectares (an area nearly twice the size of Germany), now overlap with over 150 production or designated exploration oil and gas blocks.

In addition to the immediate threats to forests and the climate, the indirect and cumulative impacts in terms of the required roads, drilling equipment, pipelines, rigs, processing plants and use of local water sources are still higher. This infrastructure would in turn open up previously intact forest areas to a 'cascade' of deforestation as loggers, settlers and poachers move in.<sup>6</sup>



Deforestation in the Congo Basin. Source Greenpeace Africa

MAP 3: OIL AND GAS BLOCKS OVERLAP WITH HUMAN SETTLEMENTS

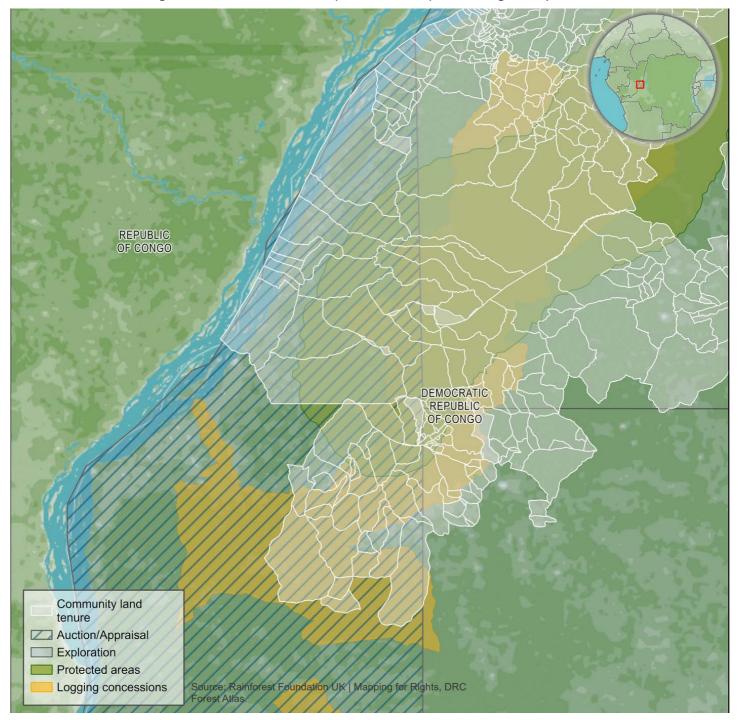


Source: Rainforest Foundation UK and Earth InSight, 2022. Source data: National Geospatial-Intelligence Agency, MappingForRights

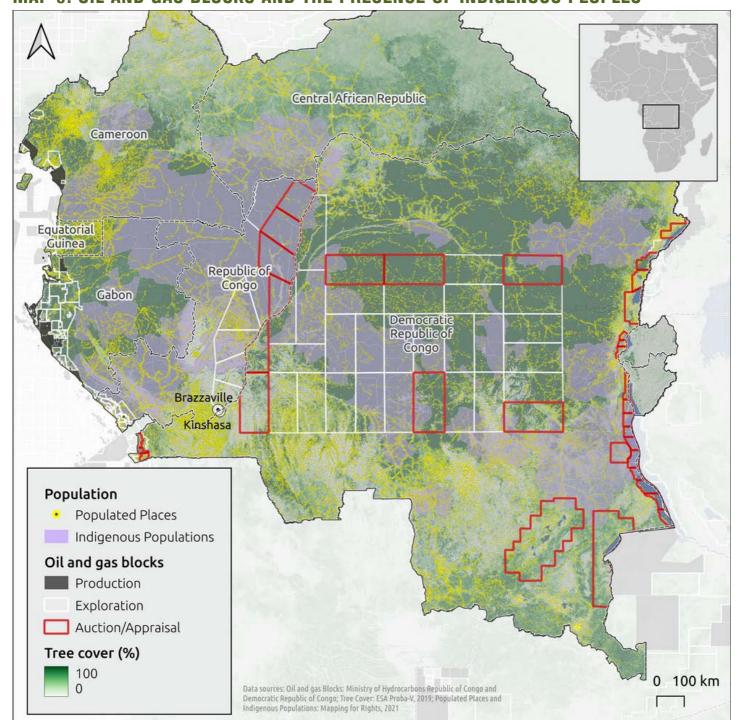
It is estimated that in the Congo Basin countries, there are over 81,000 populated places – as identified in the map above. These places are comprised of cities, towns, and villages and our analysis shows that 20% or over 16,000 populated places – representing nearly 36 million people – overlap with oil and gas blocks in the region.

#### MAP 4: PARTICIPATORY MAPPING CASE STUDY

Many communities in the region are characterised by a high degree of forest-dependency with livelihood and cultural activities extending well beyond population centres. As represented in the map below, participatory mapping with local communities supported by Rainforest Foundation UK and its local partner organisations indicates the entire forest area is likely to be subject to long-standing collective tenure claims. However, these systems mostly still lack legal recognition, leaving many communities living in industrialconcessions and more vulnerable to having their lands further dispossessed by oil and gas expansion.



This participatory map from DRC shows clan-based customary tenure and forest management systems that are prevalent across the Congo Basin and how these are superimposed by oil and gas permits and other land uses. Note that empty spaces on the map do not indicate that such areas are not subject to customary claims and usages as only a small percentage of the Congo Basin has so far been mapped by local communities. Source: MappingForRights.org, DRC Forest Atlas



MAP 5: OIL AND GAS BLOCKS AND THE PRESENCE OF INDIGENOUS PEOPLES

This map is based on desk research conducted by Rainforest Foundation UK and the Dynamique des Groupes des Peuples Autochtones (DGPA) on administrative areas in the Congo Basin countries that are known to have the presence of Indigenous Peoples. So far, only a fraction of their land use claims has been mapped on the ground. Source: Rainforest Foundation UK and Earth InSight, 2022. Source data: MappingForRights.org.

The oil and gas blocks also extensively overlap administrative areas that are inhabited by Indigenous Peoples. Both the Republic of Congo (2011) and the DRC (pending) have Indigenous Peoples laws that are supposed to safeguard the rights of Indigenous Peoples. The latter even requires the free, prior and informed consent (FPIC) of Indigenous Peoples in relation to development projects on their lands.<sup>7</sup>



Participatory mapping exercise in the DRC. Source: Rainforest Foundation UK



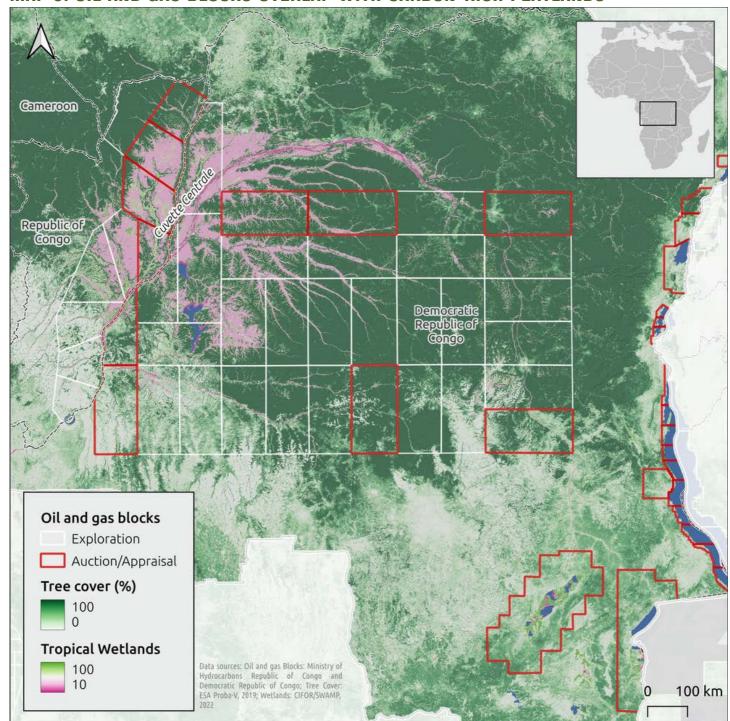
# DRC'S OIL AND GAS AUCTION - PRIMING A CARBON BOMB AND THREATENING PROTECTED AREAS

The Democratic Republic of the Congo (DRC) covers 60 percent of the Congo Basin, solidifying the country's decision-making as central to the fate of the region. In July 2022, the DRC government moved a massive auction of 30 oil and gas blocks covering more than 11 million hectares of dense tropical forest - an area nearly the size of England.

As well as the climatic impacts, the infrastructure required to even explore for oil in this remote and highly sensitive ecosystem could alter drainage patterns, contaminate water and open up previously intact forest areas to further deforestation.<sup>8</sup>



Cuvette Centrale peatlands, one of largest terrestrial carbon sinks on Earth. Source: Alamy



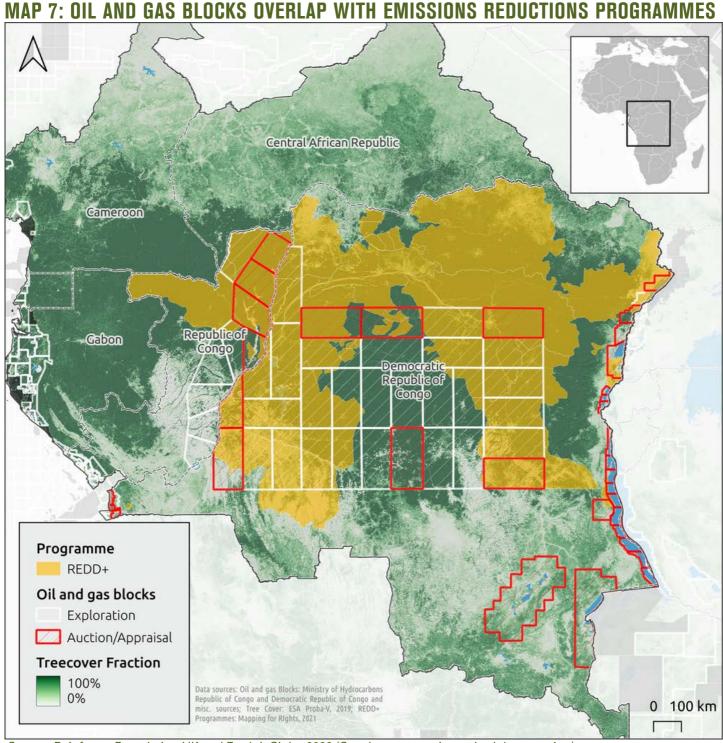
MAP 6: OIL AND GAS BLOCKS OVERLAP WITH CARBON-RICH PEATLANDS

Source: Rainforest Foundation UK and Earth InSight, 2022 (See data sources in methodology section)

Three of these oil blocks (4, 4B and 22) overlap with the Cuvette Centrale peatlands, a globally vital carbon sink storing an estimated 29 billion tonnes - or three years' worth of global fossil fuel emissions. The peat in these three oil blocks alone store 1.67 billion tonnes of carbon - equivalent to the carbon emitted by burning 14.2 billion barrels of oil, according to the CongoPeat initiative. This is in addition to several oil blocks that have already been allocated over these peatlands in the neighbouring Republic of Congo, including to oil majors Total and ENI. 10

<sup>9</sup> https://congopeat.net/wp-content/uploads/sites/49/2022/07/CongoPeat\_Briefing\_on\_Oil-Exploration\_Updated\_27\_blocks.pdf

<sup>10</sup> https://www.congomhc.com/blocks

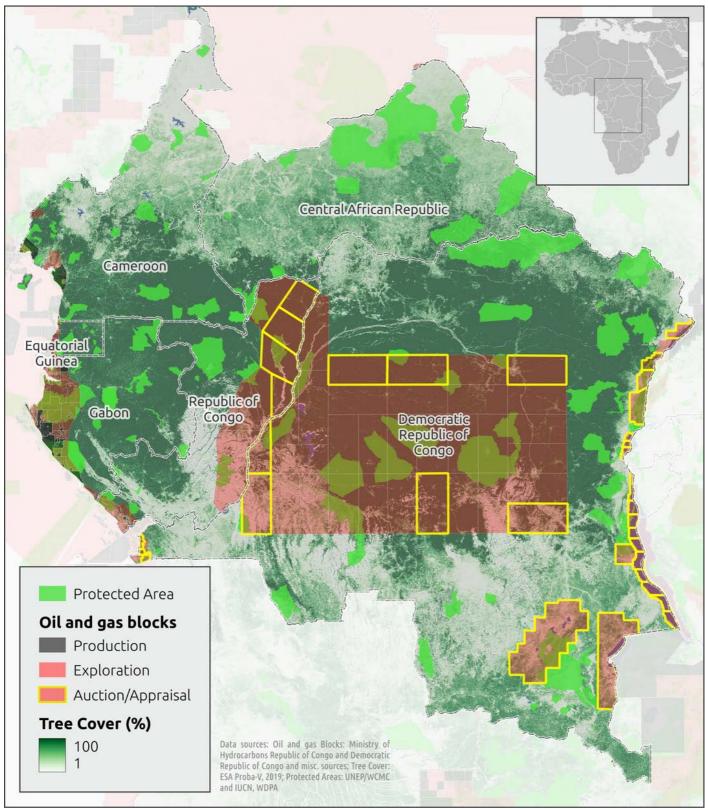


Source: Rainforest Foundation UK and Earth InSight, 2022 (See data sources in methodology section)

The primary vehicle for channelling support to forest protection efforts in the Congo Basin has been reducing emissions from deforestation and degradation, or REDD+, which aims to provide financial incentives for tropical forest countries to keep their forests standing. Over the past 15 years, hundreds of millions of dollars in international climate funding have been poured into emissions reductions programmes in the region, which are partly intended to generate carbon credits to offset emissions in the global north. As Map 7 shows, there is significant overlap with oil and gas blocks. REDD+ activities have mostly ignored these and other looming industrial threats, targeting instead The subsistence farming practices of local communities.

Meanwhile, oil companies such as Total are increasingly looking to acquire stakes in tree plantations<sup>12</sup> and even active logging concessions<sup>13</sup> in the region in a drive to offset the expansion of their oil and gas business or to generate carbon credits for sale.

MAP 8: OIL AND GAS BLOCKS OVERLAP WITH PROTECTED AREAS



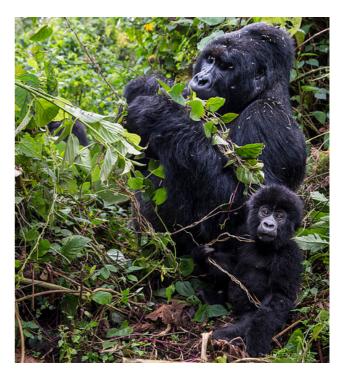
Source: Rainforest Foundation UK and Earth InSight, 2022 (See data sources in methodology section)

<sup>11</sup> Roots of inequity: How the implementation of REDD+ reinforces past injustices, 2016

<sup>12</sup> Anatomy of a 'Nature-Based Solution': Total oil, 40,000 hectares of disappearing African savannah, Emmanuel Macron, Norwegian and French 'aid' to an election-rigging dictator, trees to burn, secret contacts, and dumbstruck conservationists | REDD-Monitor

 $<sup>13 \</sup>quad https://totalenergies.com/media/news/press-releases/gabon-totalenergies-and-compagnie-des-bois-du-gabon-join-forces-developed and the state of the state o$ 

The other main conservation model in the region is strictly protected areas and the auctioned oil and gas blocks overlap at least 13 of these areas in DRC, including Virunga National Park - a UNESCO World Heritage Site. Whilst conservation enforcement activities typically target the broadly sustainable forest livelihood activities of local communities, often with severe impacts on their human rights and food security, the threats from oil, gas and other industrial activities to these areas have mostly been ignored.14



Around one third of the world's mountain gorillas live in the Virunga mountains. Source: Brent Stirton/Getty Images

TABLE 1: OIL AND GAS THREATS BY NUMBERS

Metric	Africa	Congo Basin	Congo Basin Oil & Gas	DRC Oil & Gas	DRC Oil & Gas Auction 2022
Area (millions of hectares)	3,030.0	404.9	111.9	88.1	28.7
Onshore exploration blocks (count)	1,218.0	152	114	62	30
Dense Forest (Millions of hectares)	240.9	181.4	71	53.2	11.1
Population 2020 - UN adjusted (count in millions)	1,415.3	184.0	36.5	27.3	15.2
Populated places (count)		81,510	16,311	11,936	3,872
Granted community forests (count)		152	91	101	35

Source: See methodology section in appendix

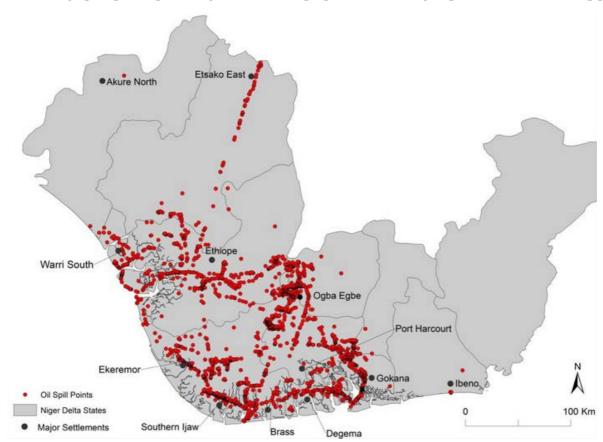
#### THE DESTRUCTIVE PRECEDENT OF FOSSIL FUEL DEVELOPMENT IN AFRICA

Oil development is often heralded as a solution to development needs. However, the reality is that the majority of the wealth lands in the hands of fossil fuel companies, banks and other vested or corrupt interests. A closer examination of the toxic legacy of oil development in the DRC and Nigeria are a cautionary tale...

# Oil in Nigeria: 50 Years of Pollution and Disastrous Community Health and Livelihood Impacts

Southern Nigeria, home of the Niger Delta, is one of the most polluted places on Earth<sup>15</sup> and over 50 years of oil operations have had disastrous effects on local communities' health and livelihoods. In fact, According to the Bayelsa State Oil and Environmental Commission, over the last half century, as many as ten million barrels of oil have been spilled across the country. That's equivalent to a spill similar in size to the Exxon Valdez catastrophe – which devastated the coast of Alaska – every single year for the last fifty years. The health of hundreds of thousands of people has been affected by the contamination of the water they drink, the land they grow food on and the air they breathe.

#### FIGURE 1: MAPPING OIL SPILLS IN NIGERIA - A DISASTER WAITING TO HAPPEN IN THE CONGO



Source: Quantifying the exposure of humans and the environment to oil pollution in the Niger Delta using advanced geostatistical techniques. Christopher B. Obida, Environment international 2018

<sup>15</sup> https://www.theguardian.com/global-development/2019/dec/06/this-place-used-to-be-green-the-brutal-impact-of-oil-in-the-niger-delta

<sup>16</sup> https://www.bayelsacommission.org/wp-content/uploads/2019/11/BSOEC-Public-Interim-Report-ONLINE-VERSION-29.10.19.pdf

Estimates suggest that the pollution could be responsible for as many as 16,000 infant deaths in one year alone.<sup>17</sup>

The widespread oil pollution in Bayelsa has been devastating. Research has found that people living near polluted sites have been continually exposed to elevated levels of heavy metals such as chromium, lead and mercury in their blood stream, leading to increased risk of diseases ranging from Alzheimer's and Parkinson's to cancer, diabetes and kidney damage.



Oil pollution in Ogoniland, Niger Delta. Image credit: Marten van Dijl, Milieudefensie via Flickr (CC BY-NC-SA 4.0)

With nearly 75% of the local population depending on fishing and farming, the Commission has come across case after case where individuals and communities have lost their livelihoods and, in some cases, reduced to destitution as the result of oil spills – underscoring the fact that the presence of oil is not a benefit to local communities, but rather it is an ongoing threat to their health, livelihoods, and very existence.

#### Oil in the DRC: An Ominous Warning

reported by Human Rights Watch, production in DRC's only active oil block, on the country's Atlantic coast, has been a source of ongoing health and environmental impacts.18 In fact, within the last decade, a Congolese Senate commission accused the government of "irresponsibility" for failing to address the air, water, and land pollution from oil operations and related leaks, flaring, and connection contamination in operations.<sup>19</sup> This ongoing toxic legacy in relation to oil development in Muanda and the region was also surrounding extensively documented by Congolese NGOs<sup>20</sup> and is a point of reference of the risks associated with further oil expansion in the Congo Basin. These risks are further amplified given that many of the oil blocks slated for development in DRC are in far more remote, logistically challenging and ecologically sensitive areas.

 $<sup>17 \</sup>quad https://www.bayelsacommission.org/wp-content/uploads/2019/11/BSOEC-Public-Interim-Report-ONLINE-VERSION-29.10.19.pdf$ 

<sup>18</sup> https://www.hrw.org/news/2022/10/03/congo-oil-gas-lease-sale-threatens-rights-and-climate-catastrophe

<sup>19</sup> https://www.radiookapi.net/emissions-2/dialogue-entre-congolais/2013/11/26/ce-soir-le-senat-accuse-perenco-de-polluer-leau-lair-le-sol-de-moanda-au-bas-congo/

<sup>20</sup> https://congominespdfstorage.blob.core.windows.net/congominespdfstorage/CRIS%20D%E2%80%99ALARME%20DES%20COMMU NAUTES%20LOCALES%20(2).pdf

### Oil: A False Development Pathway

The Congolese government rightly points to the double standards of countries in the global north that have grown rich on the back of fossil fuel development, whose per capita emissions far outstrip that of its own citizens and which continue to expand their own fossil fuel operations and profit from surging energy prices fuelled by the war in Ukraine. While these same forces are now driving oil and gas exploration to new frontiers such as in tropical forests, DRC's poor track record of managing its timber industry and other natural resources for the public good (rather than the personal enrichment of political elites) does not bode well.<sup>21</sup>

A further issue is the security implications of oil and gas pipelines, particularly in the east of the country where the state is largely absent and the fight for control over natural resources has fuelled decades-long conflicts. Pipelines in other volatile regions have not only been exposed to incessant attacks but also remained potential targets for socioeconomic sabotage and sources of environmental degradation.<sup>22</sup>

Even if the governance conditions did exist to support the country's significant local development and energy needs, the many years it would take to develop the infrastructure required to extract oil could leave these as stranded assets as the world transitions to renewable energies – something that DRC has abundant potential in.



A man walks as crude oil spills from a pipeline in Dadabili, Niger state. Source: Reuters

# DRC AUCTION: LEGALITY CONCERNS, LACK OF DUE PROCESS, AND WIDESPREAD COMMUNITY OPPOSITION

Several issues surrounding the oil and gas auction in July 2022 have done little to alleviate governance concerns. An analysis by Congolese civil society organisations found serious issues around due process including an unlawful increase in the number of auctioned blocks from 16 to 30 – placing millions of additional hectares of forest at risk, as well as the absence of a sectoral policy guiding development of hydrocarbons in the country or a land-use planning process necessary to avoid future conflicts with other land users.<sup>23</sup>

Despite the Hydrocarbons Minister Didier Budimbu's repeated assertions that oil and gas can be exploited without negative environmental impacts, it seems the auction has fallen afoul of several of the country's own environmental protection laws such as those prohibiting fossil fuel development in protected areas.<sup>24</sup> The Ministry also appears to have foregone key requirements of the country's 2011 Environmental law environmental and social impact assessments and public consultations. 25 Field missions conducted by Greenpeace Africa to dozens of potentially affected local communities on the eve of the auction found that not a single community member had been consulted in regards to the oil auction plans and most were adamantly against them.<sup>26</sup>

It appears that the people most dependent on healthy ecosystems for their livelihoods and that would be most affected by the presence of oil on their lands are in the dark about the government's plans. It is estimated that more than a million Congolese in the oil auction zone could be directly impacted by significant oil pollution, as well as population centres downstream, including Kinshasa.<sup>27</sup>



Congolese climate activists hold a concert in Goma on September 23, 2022. Image credit: © 2022 350Africa.org

<sup>23</sup> https://ogfrdc.cd/wp-content/uploads/2022/10/Note-de-position-blocs-pe%CC%81troliers-et-gaziers-RENOI-ET-autres-re%CC%81seaux-VFinale-1.pdf

<sup>24</sup> See Article 21, Law No. 15/012 of August 1, 2015 on the General Regime of Hydrocarbons and Article 25

<sup>25</sup> Articles 19 and 24 of Law No. 11/009 of July 9, 2011 on fundamental principles relating to the protection of the environment

<sup>26</sup> https://www.greenpeace.org/static/planet4-africa-stateless/2022/09/38e752f8-oil-blocks-report-english-v1.2.pdf

<sup>27</sup> ibid

#### DRC's Climate and Biodiversity Commitments and the Role of the International Community

The exploitation of oil and gas in DRC's forests would have major implications for the country's promoted image as a 'solutions country' to the climate and biodiversity crises particular its international and in commitments in these areas such as its nationally determined contribution (NDC) to the Paris Climate Accord.<sup>28</sup> For their part, DRC's international partners have not only fallen short on decarbonising their own economies but also in addressing the threat that oil development poses to international forest protection efforts.

For example, a USD 500 million forest protection agreement signed at between the DRC and the Central African Forest Initiative (CAFI), a major grouping of international donors, lacks any prohibiting oil and gas activity in the carbonrich peatlands, emissions reductions programmes or protected areas, instead only referring to vague prevention and mitigation measures.<sup>29</sup> This is despite the fact that the chaotic development of oil and gas in the country would undermine several needed CAFI-sponsored programmes on land-use planning, tenure reform, community forests and the new Indigenous Peoples law.



Aerial overview of the peatlands of the Congo Basin forest in the Equateur Province. Source: Greenpeace Africa

<sup>28</sup> Ministère de l'Environnement et Développement Durable (2021). Contribution Déterminée à l'échelle Nationale révisée.

<sup>29</sup> Central African Forest Initiative (2021). Decision of the CAFI Executive Board Meeting. EB.2021.18

# CHARTING A DIFFERENT PATH - EXPANDING PROSPERITY WITHOUT THE TOXIC LEGACY OF MORE OIL AND GAS

In the Congo Basin, there is tremendous support for increasing prosperity without expanding oil and gas development. The following alternative pathways would engender greater health and well-being for communities and citizens of the region, advance critical conservation goals, support global climate stabilisation needs, and serve as a model development approach:

- Transition away from oil and gas by unlocking the abundant potential of renewable energy in the region, promoting investments in distributed energy sources (small-scale hydro, wind, solar, etc.<sup>30</sup>)
- Invest in transparent, well-regulated, sustainable and equitable supply chains for minerals that will fuel the renewable energy transition (e.g. cobalt and lithium), ensuring that processing facilities and other value chains remain in the Congo Basin countries.
- Mobilise significant technical and financial support from the G20 economies including via a carbon windfall tax to support climate change mitigation and adaptation efforts and by leveraging debt held by foreign governments, banks, and other creditors conditioned on keeping fossil fuels in the ground, trees standing, improved governance and expanding support to Indigenous and local community forest and land rights

- Create and implement National Adaptation
  Plans in order to pursue Loss and Damage
  resources through international financial
  mechanisms designed to ensure
  industrialised economies pay their dues to
  countries bearing the brunt of climate
  change related costs.
- Ramp up financial support for the protection of forests and peatlands and expand direct support to Congolese civil society organisations, indigenous peoples and other local communities on the frontlines of tropical deforestation so that they may control their own development.<sup>31</sup>

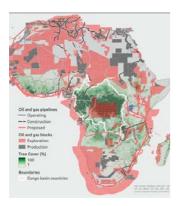


Woman carrying a solar panel near Yangambi, DRC. Source: CIFOR via Flickr (CC BY-NC-SA 4.0)

<sup>30</sup> https://congoepela.resourcematters.org/solutions#loc=4.93/-4.41/25.07

#### APPENDIX - METHODOLOGY

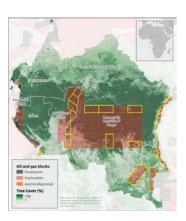
#### **Map 1: Continental Scale Threats**



To get to an accurate spatial estimate of dense forest cover we used the global tree cover fraction dataset derived from the PROBA-V mission. By using a 70% threshold on tree cover density we identified the densest forest zones which strongly coincide with undisturbed forests. The estimates of forest areas were validated against the global Tropical Moist Forests product released by the European Commission.

The oil and gas block dataset consists of a first draft compilation of public government data, investor prospectus and other sources related to the oil and gas sector.

#### Map 2: Oil and Gas Threats to Dense Tropical Forests and Other Critical Lands in the Congo Basin



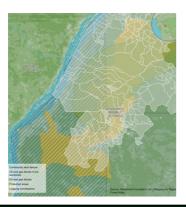
The Congo Basin countries were defined as the six6 nations that encompass the Congo Forest ecoregions: Democratic Republic of Congo, Republic of Congo, Central African Republic, Gabon, Cameroon and Equatorial Guinea. Note that the domain differs from the hydrographic basin which is smaller than the country domain. The auctioned or appraised active blocks were identified based on recent publications/auctions by the governments of the RoOC and DRC.

## Map 3: Oil and Gas Blocks Overlap with Human Settlements



This map illustrates the overlap between the planned oil blocks, the large number of settlements throughout the Congo Basin region and their concentration along rivers and access roads. The populated places layer was derived from a global product maintained by the US National Geospatial-Intelligence Agency and information collected by RF UK. Population numbers were derived from a global high-resolution gridded dataset maintained by Columbia University in New York/CIESIN.

## **Map 4: Participatory Mapping Case Study**



This participatory mapping case study was supported by RFUK and GASHE in Equateur Province, DRC

# Map 5: Oil and Gas Blocks and the Presence of Indigenous Peoples



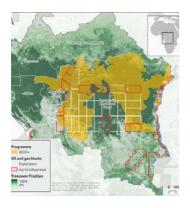
This map illustrates the overlap between the planned oil blocks and the presence of indigenous peoples based on data collected by RF UK, DGPA and other partners.

## Map 6: Oil and Gas Blocks Overlap with Carbon-rich Peatlands



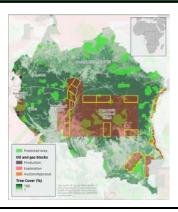
This map illustrates the overlap between the planned oil blocks and peatlands. The peatlands data is based on a global mapping effort by CIFOR as part of the The Sustainable Wetlands Adaptation and Mitigation Program (SWAMP).

## Map 7: Oil and Gas Blocks Overlap with Emissions Reductions Programmes



This map illustrates the overlap between the planned oil and gas blocks and Emissions Reductions Programmes DRC and ROC. The extent of these areas was derived from a global registry for REDD+ by RFUK.

## Map 8: Oil and Gas Blocks Overlap with Protected Areas



This map illustrates the overlap between the planned oil and gas blocks and Protected Areas as classified by the United Nations Environment Programme (UNEP) and the International Union for Conservation of Nature (IUCN), managed by UNEP World Conservation Monitoring Centre (UNEP-WCMC).

#### **Data Sources**

- Oil and gas blocks: RFUK oil and gas block database, the Ministry of Hydrocarbons of the Republic of Congo, the Ministry of Hydrocarbons of the Democratic Republic of Congo, World Oil Map 2021 (Leal, 2021) which was significantly validated and improved by Earth Insight (2022). The final database should be referenced as Earth Insight 2022.
- <u>Pipelines:</u> The Global Oil and Gas Infrastructure Tracker maintained by the Global Energy Monitor provides an inventory of pipelines and their most up to date status.
- Oil and gas basins: CGG Robertson Basins and Plays Basin Outlines define over 800 sedimentary basins worldwide. The database was designed to understand basin and play scale petroleum geology worldwide.
- <u>Tree Cover Fraction:</u> The Global Tree Cover Fraction was derived from the PROBA-V satellite observations and ancillary datasets.
- <u>Tropical Moist Forests:</u> The European Commission's Joint Research Centre developed this new dataset on forest cover change in tropical moist forests (TMF) using 40 years of Landsat time series.
- Wetlands: The Sustainable Wetlands Adaptation and Mitigation Program (SWAMP)
- Country outlines: The Global Administrative (GADM) dataset provides administrative boundaries at all levels of subdivision.
- <u>Populated places</u>: The populated places database were derived from the Geographic Names Server maintained by the US National Geospatial-Intelligence Agency.
- <u>Population data:</u> High-resolution population estimates were derived from the Columbia University GRID3 (Geo-Referenced Infrastructure and Demographic Data for Development) dataset for Africa.
- Protected Areas: World Database of Protected Areas (WDPA) UNEP-WCMC/IUCN.

