

Climate and Environmental Security in the Democratic Republic of Congo: Competing over Abundant Resources - Adapting to Change

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Climate and Environmental Security in the Democratic Republic of Congo

Competing over Abundant Resources – Adapting to Change

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Content

An Abundance of Resources and Problems	3
Tropical Forests as Ground Zero for Climate Security	3
Understanding the Dynamics of Conflict and Climate Change	4
The Role of the Environment in Conflict Dynamics in DRC	4
Climate Change as a Driver of Human Insecurity	5
Inequality Renders Many Congolese Vulnerable to Climate Change	6
Future Outlook on Climate Impacts in DRC	8
Equitable Energy for DRC and Hydro-Powered Hydrogen	10
Deep Energy Poverty Despite Abundant Hydropower	10
A Vastly Oversized Project	12
Fuelling Corruption	12
A Green Resource Curse?	13
Extractives and Security	13
Congolese Resources in the Context of the Global Energy Transition	16
Europe: Between Economic Security and the Ethics of Supply	16
Conclusion and Recommendations	17

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AN ABUNDANCE OF RESOURCES AND PROBLEMS

In a country marked by violence and instability, the repercussions of climate change can deepen conflict and drive the population further into poverty and famine. In the Democratic Republic of Congo (DRC), amidst the multi-layered, entrenched conflict shaping the lives of millions of people, climate change threatens to deepen divisions over biodiversity protection and resource extraction. National and international policymakers are faced with the need to take difficult decisions under conditions of great uncertainty: In a positive scenario, the DRC will harness the opportunities from the green transition to achieve a sustainable approach to development – improve governance, strengthen the situation of marginalized groups including women, and protect global common goods like biodiverse carbon sinks. In a negative development, a green resource curse could materialize.

The German government has been drafting several strategies: a National Security Strategy, a Climate Foreign Policy Strategy, and the Guidelines on Feminist Policy in development and foreign relations which were recently published.¹ Such intersecting strategies are necessary because of the multiple issues the Democratic Republic of Congo faces:

- Traditional security concerning the violent conflict perpetuated by armed groups in the eastern provinces;
- Climate and environmental security, including the fact that the exploitation of forest resources and global environmental change endanger access to a safe and clean environment; and
- Human security more broadly, including the upholding of human rights, gender equality and safeguarding livelihoods and basic labour standards. German foreign and development policy in partnership with its abroad counterparts will face acute questions of how to implement these well-intended texts.

The concepts of territorial, climate and human security are not new and usually raise the perennial question for national policymakers “whose security”: how to conceive of new dependencies and responsibilities

that stretch beyond German territory, and how to justify spending scarce national resources on diffuse security issues? The case of DRC shows that a new and altogether different sensibility is required from Germany when applying these strategies. The natural resources of the DRC, including its potential to produce green hydrogen, could be a gamechanger for the region and for trade relations with industrialized countries. But this abundance also holds potential for further distribution conflicts and neo-colonial exploitation patterns.

Europeans need to be aware of their colonial history and ensure that any extraction of resources safeguards biodiversity and benefits the local communities – and not just Western trading partners or the DRC's elites. There is a strong risk of deepening colonial-era inequalities, through climate impacts and resource partnerships. Hence, European and German decision makers and companies increasing their engagement with the DRC bear a great responsibility. Germany particularly faces dilemmas when implementing its Feminist Foreign Policy in bilateral relations to the DRC, a country marked by ongoing conflicts, corruption and human rights violations.

But withdrawal is not an option. Not only does Europe increasingly depend on imports such as cobalt or green hydrogen for its green energy transition. Should the Europeans refuse to engage, they would also leave room for other actors with adverse geopolitical agendas and track records in human rights violations to move in and secure resources. China and Russia which both have increased their engagement with the DRC are a case in point. As the European Green New Deal will have to rely on imports engagement is necessary, but will require coherent policy approaches and improved governance to avoid negative side effects.

Tropical Forests as Ground Zero for Climate Security

Current levels of resource exploitation as well as poverty-driven encroachment threaten the country's largest asset: its vast tropical rainforest. The DRC could play a pivotal role in international climate and biodiversity protection, but persistent conflicts impede human development, especially for women. The links between biodiversity protection and armed conflict is less clear-cut. Long-term restoration projects, environmental research, and the promotion of eco-tourism are hindered by the conflict. But while armed groups exploit forest

1 Leitlinien für feministische Außenpolitik: Außenpolitik für alle: <<https://www.auswaertiges-amt.de/de/aussenpolitik/leitlinien-ffp/2584950>> Feministische Entwicklungspolitik – Für gerechte und starke Gesellschaften weltweit: <<https://www.bmz.de/resource/blob/146200/strategie-feministische-entwicklungspolitik.pdf>>

resources and perpetuate poverty-driven forest use, improved stability in the DRC could create a better investment environment which in turn could eventually lead to even larger industrial-scale destruction.

Against this complex background, the paper assesses the nexus where climate change, resource exploitation and inequality become a driver of conflict and in turn can be fuelled by conflict. After assessing how the DRC's fragile security setting undermines the country's ability to mitigate existing and future climate impacts, the analysis focuses on efforts in DRC to address climate impacts. This analysis demonstrates the complexity of balancing modern dependencies with conflict alleviation and climate mitigation – which reinforces Germany's need to develop a robust set of distinct yet mutually complementary strategies. The paper concludes with recommendations for how new German strategies can increase engagement with the world without causing unintended detriments to complex conflicts. Germany's policy effectiveness regarding its relations with the DRC will be shaped not only by the National Security Strategy but also by its intersections with the strategies on climate and Feminist Foreign Policy.

UNDERSTANDING THE DYNAMICS OF CONFLICT AND CLIMATE CHANGE

In complex partnerships like DRC-European relations, analysis, knowledge, and ideas are key – and so is the question of who produces them. Persistent security challenges have translated into trying circumstances for scientific research and data collection, and local researchers often lack funding. For climate security research, the multiple and interacting drivers of violence in different parts of the DRC make it difficult to decipher how climate change and biodiversity loss interact with conflict. An unequal research landscape in broader climate impact science has also contributed to the negligence of the implications of changing conditions in DRC. Policymakers in DRC and partner countries, when looking for reliable analysis, quickly find that the impacts of climate change on the society and economy of the country remain largely understudied. Such knowledge gaps translate into yet another task for the DRC's national policies. They also mean that German

and European policymakers are under pressure to craft adaptive foreign and security policy strategies.

There are, however, two primary theories that policymakers can apply to better understand the dynamics of conflict formation in the DRC. One is the “resource curse” theory, which describes situations in which countries with abundant resources are unable to use these resources to promote human development and economic growth. Distributional conflicts can trap these states in poverty, with only a selected elite able to thrive economically. This is often linked to the appreciation of the exchange rate due to natural resources exports, which undermines the development of domestic industries. As a result, economic resources for the formation of a strong middle class are limited. The other theory is the “climate-insecurity nexus,” which broadly assumes that extreme weather events and slow-onset climate impacts diminish the resource base, leading to a higher potential for conflict under circumstances such as agricultural dependency or ethnic fractionalization.²

The common factor in the seemingly contradicting theories, and thus a logical starting point for German engagement, is inequality, i.e., the unequal access to the available resources regardless of their abundance. This first section explores this aspect by showing how layers of inequality and poverty prevent many Congolese from adapting to climate impacts and the evolving conflict landscapes. We build on this by illustrating a case where conservationists have used inclusive community-based approaches to address different dimensions of inequality in a reserve that is less affected by conflict and insecurity than other parts of the DRC. This example shows that these competing crises can be managed, but this requires international actors to take a bottom-up approach that empowers local communities.

The Role of the Environment in Conflict Dynamics in DRC

The DRC is entrenched one of the world's deadliest civil conflicts with 100 armed militias currently operating in the country's eastern provinces (North and South Kivu and Ituri).³ Even though research on the relationship between climate change and conflict in the DRC is virtually non-existent, it is clear that inequality is a defining fac-

2 Mach, K.J., Kraan, C.M., Adger, W.N. et al. Climate as a risk factor for armed conflict. *Nature* 571, 193–197 (2019): <https://doi.org/10.1038/s41586-019-1300-6>; Schleussner, Donges, Donner, Schellnhuber: (2016) Armed-conflict risks enhanced by climate-related disasters in ethnically fractionalized countries, *PNAS*: <https://doi.org/10.1073/pnas.1601611113>.

3 Kivu Security Tracker: Crisis Mapping in Eastern Congo (2023): <https://kivusecurity.org> (Accessed February 2, 2023)

tor here, too. The conflict is characterized by competition for natural resources, illegal mining, land disputes, and power struggles which, in some cases, led to the alignment of politicians with armed groups that fuel grievances and tensions.⁴⁵ The fighting also has a direct impact on food security. Militias confiscate crop yields and occupy farm lands. During periods of heightened tensions, rebel groups also block roads. This disrupts supply chains, when produce cannot reach markets. The operation of these groups also has a significant bearing on environmental degradation and biodiversity loss, for example, from illegal logging and wildlife trading.

Some experts also see the militarization of conservation efforts, such as arming eco-guards for the enforcement of national park protection, as an exacerbating factor.⁶ In fact, violently enforced forest protection can spark or aggravate conflicts if no, or too few, alternative income sources are offered to those trying to access forest resources. Denying people such access can cause insecurity, especially when enforced violently. Cases of where internationally-financed ecoguards committed human rights abuses support this. For example, non-governmental organisations documented attacks by park rangers and Congolese military staff in the East-Congolese Kahuzi Biega National Park against the local population of the Batwa. According to the NGOs, there were allegations of murder, group-rape of women, and the destruction of settlements.⁷ These incidents underline the gendered nature of conflict dynamics in eastern DRC,⁸ where women can become victims of sexual and gender-based violence.⁹

Germany has been providing financial assistance to the Kahuzi Biega park. The human rights violations

show the need for further alignment of conservation efforts and Feminist Foreign Policy, with the former requiring preventative measures which can reduce the risk of violence targeted at women and marginalized groups like the Batwa and the latter providing concrete guiding tools for project implementation.

Climate Change as a Driver of Human Insecurity

Changing climatic conditions create new inequalities by aggravating food insecurity and displacement, both of which compound conflict dynamics in Eastern DRC.¹⁰ As temperatures increase and precipitation patterns become more variable, livelihoods will be affected, fuelling grievances over land, water, and other resources throughout the country. For example, in the north-eastern Ituri province there have been clashes between the Hema herder communities and the Lendu farmers over land and water issues.¹¹ The potential for these conflicts are expected to increase as precipitation changes push semi-nomadic herding communities to encroach on sedentary agriculturalists in search of water.¹²

Given the impact of climate change on conflict dynamics in Eastern DRC, international peace efforts will become even more challenging. MONUSCO,¹³ as one of the largest UN missions located in both a conflict and climate hotspot, should take the consequences of climate change into account. But with MONUSCO facing a severe credibility crisis, effective action is unlikely at the moment.¹⁴ This puts the focus on other actors, such as the African Union (AU) and the Economic Community of Central African States (ECCAS), which are increasingly concerned with climate security issues.

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- 4 Verweijen, J. and Marijnen, E. (2018). The Counterinsurgency/Conservation Nexus: Guerrilla Livelihoods and the Dynamics of Conflict and Violence in the Virunga National Park, Democratic Republic of the Congo, *The Journal of Peasant Studies* 45, no. 2: 300–320
- 5 Stearns, Jason K.. *The War That Doesn't Say Its Name* (p. 7). Princeton University Press. Verweijen J, Schouten P, and Simpson F, O. (2022). *Armed Actors and Environmental Peacebuilding Lessons from Eastern DRC*. United States Institute of Peace.
- 6 Verweijen, J. and Marijnen, E. (2018).
- 7 Mariel Müller, "Kongo: Tödliche Gewalt im Nationalpark," *Deutsche Welle*, April 06, 2022: <<https://www.dw.com/de/kongo-t%C3%B6dliche-gewalt-im-nationalpark/a-61364315>> (accessed April 3, 2023).
- 8 Democratic Republic of the Congo Deputy Prime Ministers Office, National Adaptation Plan to Climate Change (2022–2026) (November 2021): <https://unfccc.int/sites/default/files/resource/DRC-NAP_EN.pdf> (accessed February 2, 2023).
- 9 MPMR, MSP, International I. Enquête Démographique et de Santé en République Démocratique du Congo 2013–2014. Ministère du Plan et Suivi de la Mise en oeuvre de la Révolution de la Modernité (MPMR), Ministère de la Santé Publique (MSP) et ICF International. Rockville, Maryland, USA. 2014: 2014
- 10 National Adaptation Plan to Climate Change (2022 – 2026). World Bank Group. (2021). Climate risk country profile: Congo, Democratic Republic. Tshimanga, R.M. et al. (2021). An integrated information system of climate–water–migrations–conflicts nexus in the Congo Basin, *Sustainability* 2021, 13(16).
- 11 The changing weather patterns have driven the Hema to move around in search of water pockets, bringing them into conflict with the Lendu. It is estimated that clashes between these communities have already claimed over 50,000 lives while another 300,000 have fled their homes.
- 12 Freeman (2017) Environmental change, migration, and conflict in Africa: A critical examination of the interconnections. Okpara, U.T., Stringer, L.C. & Dougill, A.J. (2017) Using a novel climate–water conflict vulnerability index to capture double exposures in Lake Chad. *Reg Environ Change* 17, 351–366. van Baalen, S., & Mobjörk, M. (2016). A coming anarchy?: Pathways from climate change to violent conflict in East Africa.
- 13 MONUSCO is short for the United Nations Organization Stabilization Mission in the Democratic Republic of the Congo.
- 14 Fröhlich, S., DR Kongo: "MONUSCO, zieh endlich ab!" *Deutsche Welle*: <<https://www.dw.com/de/dr-kongo-monusco-zieh-endlich-ab/a-62630332>> (accessed March 31, 2023); Wagner, K. (2022): Sexual exploitation by UN peacekeepers in DRC: fatherless children speak for first time about the pain of being abandoned. *The Conversation*: <<https://theconversation.com/sexual-exploitation-by-un-peacekeepers-in-drc-fatherless-children-speak-for-first-time-about-the-pain-of-being-abandoned-188248>> (accessed March 31, 2023).

Inequality Renders Many Congolese Vulnerable to Climate Change

The ability of the Congolese population to respond and adapt to climate-change impacts has been significantly reduced by decades of conflict, persistent poverty, and corruption. This all renders the DRC as one of the most vulnerable countries to climate change (178 of 182).¹⁵ High poverty rates across DRC (64 per cent living below the international poverty line) mean that many Congolese have little resources to adapt to climate-related impacts.¹⁶ More than 26 million Congolese currently face acute food insecurity.¹⁷ The global economic effects of the COVID-19 pandemic and rising commodity prices are compounding the situation. Projections for 2023 indicate that food insecurity will remain high throughout the year, especially in conflict-affected North Kivu and Ituri.¹⁸

DRC has over 5.5 million internally displaced persons (IDP), the largest number of any country in Africa.¹⁹ These displacements are largely conflict-related, but in some cases, such as during the extreme floods of 2022 in Kinshasa, or the Uvira floods in South Kivu 2020, people are displaced by extreme events. This appears to be part of a wider regional trend, with torrential rains hitting many regions in Central and West Africa and forcing 2.9 million people to leave their homes. While research in DRC on this topic is scarce, it is clear that climate-induced seasonal shifts and biodiversity loss can contribute to drivers of displacement and migration.²⁰

Displacement can create tensions between newly arriving populations and host communities who may compete over available resources. These conditions have pushed some host communities to enlist armed groups to protect their land and limited resources, making pockets of eastern DRC a recruitment ground

for armed actors.²¹ Regional climate impacts, such as droughts in the Lake Chad basin, have also led to an influx of pastoralists into north and eastern DRC. Their presence has reportedly elevated tensions as they compete for resources with local farmers.²²

Migration can be a strategy for adapting to the territorial strains of climate change, but few IDPs in the DRC have escaped climate-related impacts, food insecurity, and poverty. Many live in make-shift camps and depend on aid from local and international agencies. The international focus on IDPs in camps is perceived to magnify poverty-based inequalities, which further increases tensions between the IDPs and their host communities. Rising temperatures will likely cause living conditions to further deteriorate, compounding health risks in camps and poverty settlements alike.

The situation of IDPs is just one example of how climate impacts disproportionately affect marginalized groups. Poor and peripheral communities also lack access to knowledge on projected climate challenges, which further exacerbates their vulnerability. Groups that already suffer from an unequal distribution of available resources will likely be disproportionately affected by climate-related shortages if no adaptive measures are taken. Women and girls can be particularly vulnerable due to gender roles and norms that marginalize them.^{23 24} Moreover, there are indications that rising livelihood stress and community vulnerability breeds domestic violence.²⁵ In a country with limited state capacity and the experience of decades of violence, enabling marginalized groups to become more resilient is critical. As climate change impacts are projected to increase and severely affect livelihoods, new risks for resource conflicts could materialize or exacerbate ongoing conflict constellations in the DRC.²⁶

15 Notre Dame Global Adaptation Initiative, ND-GAIN Rankings (2023): <<https://gain.nd.edu/our-work/country-index/rankings/>> (accessed February 2, 2023).

16 The World Bank, Democratic Republic of Congo: <<https://www.worldbank.org/en/country/drc/overview#1>> (accessed April 3, 2023).

17 Integrated Food Security Phase Classification, Democratic Republic of the Congo: Acute Food Insecurity Situation July - December 2022 and Projection for January - June 2023: <<https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1155972/?iso3=COD>> (accessed April 3, 2023).

18 Ibid.

19 Sida. (2022). Humanitarian crisis analysis 2022: Democratic Republic of Congo; SADC. (2022). Synthesis report on the state of food and nutrition security and vulnerability in Southern Africa; World Bank Group. (2021). Climate risk country profile: Congo, Democratic Republic; Netherlands Ministry of Foreign Affairs. (2018). Climate Change Profile: Democratic Republic of Congo (east). Netherlands Ministry of Foreign Affairs.

20 IDMC Democratic Republic of Congo. OCHA. République démocratique du Congo - Note d'informations humanitaires pour les provinces du Sud-Kivu & Maniema, 6 décembre 2022

21 Delgado C, Tschunkert K and Smith D. Food insecurity in Africa: Drivers and Solutions (SIPRI, October 2022)

22 Nagabhatla, N. et al. (2021). Water, conflicts and migration and the role of regional diplomacy: Lake Chad, Congo Basin, and the Mbororo pastoralist, *Environmental Science & Policy*, 122, 35-48.

23 Ministry of Gender, Family and Children (MGFE) published Politique nationale d'intégration du genre, de promotion de la famille et de protection de l'enfant (2009)

24 Bapolisi, W. A. et al. (2021). Gendered determinants of food insecurity in ongoing regional conflicts, North and South Kivu, the Democratic Republic of Congo, *Agriculture & Food Security*, 10(1), 1-9.

25 Johnson K, Scott J, Rughita B, Kisielewski M, Asher J, Ong R, et al. Association of sexual violence and human rights violations with physical and mental health in territories of the Eastern Democratic Republic of the Congo. *JAMA*. 2010;304(5):553-62

26 World Bank Group. (2021). Climate risk country profile: Congo, Democratic Republic; Netherlands Ministry of Foreign Affairs (2018), Climate Change Profile: Democratic Republic of Congo (east). Netherlands Ministry of Foreign Affairs.

Future Outlook on Climate Impacts in DRC

The DRC is already exposed to extreme weather events, including extreme rainfall, heatwaves, floods, and droughts.²⁷ As of 2020, the duration of the rainy season in the drought-prone region of Katanga reduced from seven months to five months. In 2022, extreme rainfall caused floods around the DRC's capital Kinshasa which killed more than 120 people and destroying hundreds of houses.²⁸ Such extreme events are set to become more frequent and intense as global temperatures rise.²⁹

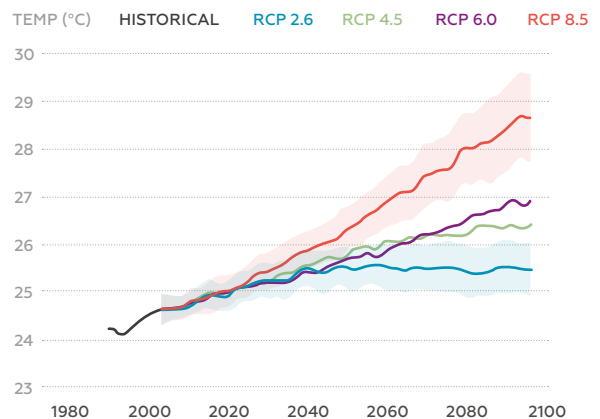
Although the mean temperature in DRC is expected to increase across all emission scenarios, the differences between lower and higher emissions scenarios are stark. Climate change projections indicate that in a high emissions scenario (RCP 8.5), the average annual temperature in the DRC is expected to increase between 1.2°C to 2.4°C by the middle of the century (2040-2059), and up to 5.1°C by the end of the century (2080-2099).³⁰ In this extreme scenario, the number of hot days and dry spells are projected to increase dramatically, likely to result in frequent heatwaves and prolonged droughts.³¹ This change could render large parts of the DRC uninhabitable because of deadly heat by the end of the century as the thermoregulatory boundary conditions for human habitation would be surpassed on most days of a given year (see figure 2 on page 8).³² Rainfall is also projected to become more variable, with an increase in frequency and intensity.³³

In a lower emissions scenario (RCP 2.6), temperature increase is predicted to be significantly lower than in the RCP 8.5 emission scenario (see figure 1). This would leave room for adaptation. Climate-related impacts, particularly droughts and floods, are still projected to increase, but extreme events would be much less intense and frequent than in higher emissions scenarios. However, even in lower and moderate emissions scenarios, impacts can translate into lower agriculture productivity, destruction of infrastructure, and health burdens. Even moderate disturbances to agriculture would be particularly concerning for the country's many subsistence and smallholder farmers and

could translate into increased food insecurity without adequate adaptive responses. Reducing global emissions (mitigation) and improving adaptive capacity and resilience are thus key to limiting the adverse effects on the population.

What could future impacts mean for human security and violent conflict in DRC? While further research is needed to provide more in-depth foresight, underlying inequalities are unquestionably set to worsen if the impacts of climate change affect the strategic operations of armed groups in the east. As climate change and environmental degradation reduce their access to land and resources, armed groups will likely expand efforts to occupy arable land; exert control and extort income from natural resources vis-a-vie illegal mining, logging, and poaching; and to recruit the dispossessed and displaced.³⁴

Figure 1 – Historical and Projected average temperature for the DRC from 1986 to 2099 (Reference Period, 1986-2005)



Future temperature change in the DRC based on different emissions scenarios. Shades represent uncertainty ranges and are shown for RCP2.6 (Paris Consensus) and RCP8.5 (Business as Usual) only. | Source: World Bank Group. (2021). Climate risk country profile: Congo, Democratic Republic.

27 Kendon, E.J., Stratton, R.A., Tucker, S. et al. (2019) Enhanced future changes in wet and dry extremes over Africa at convection-permitting scale. *Nature Communications*, 1794: <<https://doi.org/10.1038/s41467-019-09776-9>> (accessed April 3, 2023)

28 OCHA Relief Web, DR Congo: Floods and Landslides – Dec 2022 (2023): <<https://reliefweb.int/disaster/fl-2022-000376-cod>> (accessed February 2, 2023).

29 Sara Karam et al., "Assesing the Impacts of Climate Change on Climactic Extreme in the Congo River Basin," *Climactic Change* 170:40 (2022): <https://inweh.unu.edu/wp-content/uploads/2022/03/Karam2022_Article_AssessingTheImpactsOfClimateCh.pdf> (accessed February 2, 2023).

30 World Bank Group. (2021). Climate risk country profile: Congo, Democratic Republic.

31 World Bank Group. (2021). Climate risk country profile: Congo, Democratic Republic.

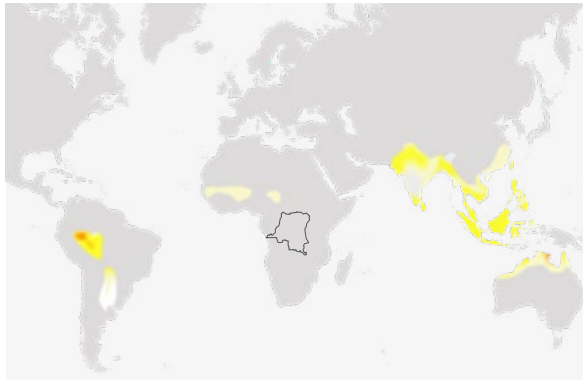
32 Camilo Mora et al., "Global Risk of Deadly Heat," *Nature Climate Change* 7, 501-506 (2017): <<https://www.nature.com/articles/nclimate3322>> (accessed February 2, 2023).

33 World Bank Group. (2021). Climate risk country profile: Congo, Democratic Republic.

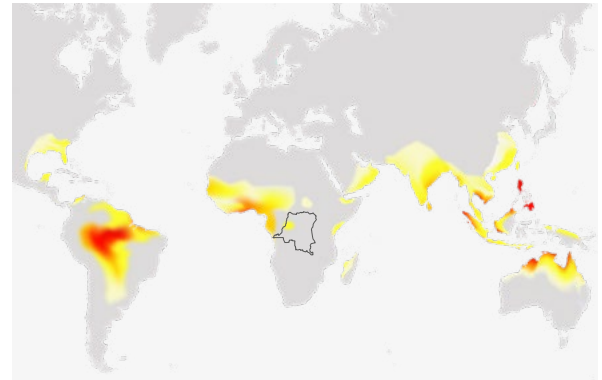
34 Milburn, R. (2015). *Gorillas and Guerrillas: Environment and Conflict in the Democratic Republic of Congo*, in *Environmental Crime and Social Conflict*, Routledge; Beyers R. L. et al. (2011). *Resource Wars and Conflict Ivory: The Impact of Civil Conflict on Elephants in the Democratic Republic of Congo - The Case of the Okapi Reserve*, ed. Michael Somers, *PLoS ONE* 6, no. 11

Figure 2 – Yearly exposure to deadly climatic conditions under different emission scenarios in the DRC

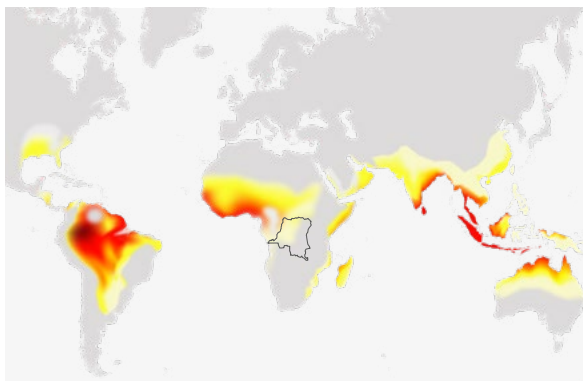
**Historical/Current Conditions
(1995–2005)**



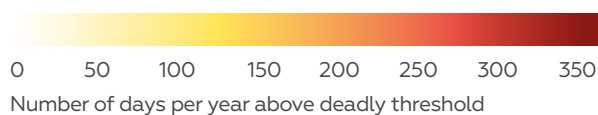
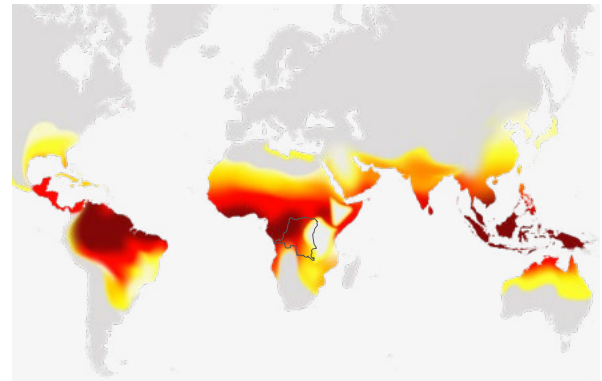
**Paris Consensus Emission Mitigation Scenario
in 2090–2100 (RCP2.6)**



**Policy Delay Intermediate Emission Scenario
in 2090–2100 (RCP4.5)**



**Business-as-Usual High Emission Scenario
in 2090–2100 (RCP 8.5)**



The global map with the DRC outlined shows the number of days per year exceeding the threshold of temperature and humidity beyond which climatic conditions become deadly, (a) under current climate conditions (1995 – 2005), and by the end of the century (2090 – 2100) under different emission scenarios: (b) RCP 2.6 is compatible with the Paris Agreement associated with a global temperature increase of up to 1.7°C by 2100, (c) RCP 4.5, also referred to as the intermediate scenario projects a maximum temperature increase of 2.6°C and (d) the RCP 8.5, which is a high emission scenario linked to a temperature increase of up to 4.8°C. Large areas of the DRC will be exposed to deadly conditions for multiple days each year even under an intermediate emission scenario.

Source: Mora, 2017, Global risk of deadly heat, Nature Climate Change

THE LUKI BIOSPHERE RESERVE: A TEST CASE FOR MANAGING CLIMATE CHANGE, CONSERVATION, AND HUMAN SECURITY

Given the complexity of the overall conflict dynamics in the DRC, Germany should take note of local success stories to inform its future involvement— especially if these success stories show how to tackle inequality. The Luki Biosphere Reserve offers some lessons in this regard. This reserve occupies 33,000 hectares of natural rainforest in the southwest of the DRC.³⁵ and it has mostly successfully protected the fragile and biodiverse ecosystem against illegal forest exploitation since 1976. The reserve is patrolled by unarmed staff and is home to about 7,500 people, with over 62,000 more living in the surrounding area.³⁶ Agriculture and agroforestry provide the inhabitants' primary income. Farmers cultivate mainly corn, manioc, and bananas for their families' subsistence, but also grow palm oil, coffee, and cacao commercially.

Despite the non-violent approach employed by the Luki personnel, there has been relatively little encroachment on the reserve. Relations with neighbouring communities have remained healthy. This illustrates that non-violent, local solutions can enable long-term conservation in the DRC if competing interests are managed appropriately.

However, even in this context resilience is constrained by a lack of gender equality. Traditionally, within the families living in the area the roles are clearly divided between men and women: The men who formally own the family's assets and thus manage seeds, crops, and livestock as the main assets, while women are mostly responsible for domestic duties and taking care of the children.³⁷ Women have less authority over household resources, and their health is also at greater risk. The reserve housing

is rarely connected to the energy grid and therefore uses biomass for heating and cooking. Cooking with biomass releases indoor air pollutants, and the WHO has linked this to severe respiratory diseases, leading to the premature death of millions of women across Africa.³⁸

Climate impacts have the potential to worsen these gender dynamics. In terms of farm duties, men prepare the fields for cultivation while women cultivate fields and harvest crops. Agricultural activities depend on the rainy season, which usually starts in mid-October and ends by mid-May. Yet, due to climate change, precipitation is becoming increasingly variable, and farmers can no longer be sure of when the rain season will begin. While on average, the rain season has become shorter, but the amount of rain varies more than usual. The drier soil loses its ability to absorb unusually heavy rain, which then leads to flooding. Overall, the soil is becoming less fertile, and crops are more frequently affected by diseases. To cope, farmers resort to greater use of fertilizers despite their damaging effects. Yet even then, cultivating some crops such as corn is becoming increasingly unsustainable due to drastically declining yields.

The result is a decline in crop yields, which reduces household income. This causes some men to leave their homes in search of work to sustain their families. But this migration does not always lead to improved adaptation, as men are not necessarily sending money home due to a lack of income or the disintegration of familial structures, leaving women and their children in particularly affected regions may be left in these highly exposed regions without sufficient financial resources. The triple burden of agricultural labour, childcare, and household chores limits their options for improving their situation. Out of despair, some women are forced to depend on other men or even prostitution to feed their children and themselves.³⁹

³⁵ UNESCO, Luki Biosphere Reserve, Democratic Republic of Congo: <<https://en.unesco.org/biosphere/africa/luke>> (last updated 08.02.2023).

³⁶ Ibid.

³⁷ World Health Organization, Household Air Pollution (2022): <<https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>> (accessed February 2, 2023).

³⁸ <<https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>>

³⁹ Similar patterns have also been observed elsewhere by Melissa Farley, Making the connections: resource extraction, prostitution, poverty, climate change, and human rights, in: Int'l J. of Human Rights Vol. 26 (22), pp. 1032-1055.

If Germany is to live up to its obligations and apply its new more comprehensive approach to security, the Luki reserve offers lessons. To help improve resilience and counter to the negative impacts of climate change on biodiversity and human security, three measures are recommended:

- In the short term, enable households to diversify their income sources by engaging in fungiculture, beekeeping, livestock (poultry and goat), etc.
- In the medium and long term, help develop the peripheral savannahs through agroforestry plantations based on fast-growing species. This will create additional forests, provide firewood, and improve the soil while preserving the natural forests. Improving access to electricity can further help reduce the use of wood as a domestic energy source.
- Finally, research and development projects could make it possible to identify other adaptation options. One proposal is to experiment with planting white or black pepper in the undergrowth of agroforestry plantations, with the participation of local communities.

EQUITABLE ENERGY FOR DRC AND HYDRO-POWERED HYDROGEN

Policies for the climate transition are necessary but can still have negative consequences, especially given the fragile situation in the DRC. Conservation programs can backfire if planned with an insufficient understanding of local conditions. This is true on a far grander scale for energy infrastructure, and the use of hydropower in the DRC exemplifies this issue. In Europe, producing renewable power domestically is seen as the best way to reduce emissions and boost economic security. In the DRC, the calculation is different: While hydropower offers a means of ex-

ploiting an abundant source of energy for regional development, it carries a large risk of economic insecurity due to the investment costs involved. A project designed with the best of intentions could easily exacerbate inequalities.

So where does hydropower fit into the DRC's energy landscape, and what are the risks and opportunities it represents locally and globally through hydrogen exports? While the production of hydropower and hydrogen can help improve growth and reduce emissions, the risk of corruption is high. Without suitable checks, hydro projects can become a source of national instability.

Deep Energy Poverty Despite Abundant Hydropower

Energy poverty and insecurity of supply are a key constraint for equitable human development in the DRC. In 2020, over 90 percent of the DRC's energy supply came from biomass and waste used for cooking and heating.⁴⁰ Electrification is considered the primary substitute, and in the DRC, hydropower is an obvious source for generating power. The Inga 1 and 2 dams were built decades ago and provide virtually all the country's electricity. Together these dams have a capacity of about 1,8 GW. However, since their construction, access to power has only improved slowly, from 6.7 percent of the population in 2000 to 19.1 percent in 2020.⁴¹ This progress was also uneven, as urban areas reached 40.7 percent penetration in 2020, whereas rural areas remain almost wholly disconnected from the grid, with less than one percent of households able to access electricity.⁴²

This reality is very much at odds with the vision of a DRC hydro system that could power sub-Saharan Africa. The first iterations of the "Grand Inga" reach back to the 1970s. Plans eventually outlined a series of six hydropower projects (Inga 3-8) to expand upon the existing Inga 1 and 2 dams along the Congo River in western DRC. This is the world's largest hydro proposal, with the six projects costing an estimated USD 80 billion for 40 GW of capacity.⁴³

This proposal has existed for decades yet was never realized. A significant barrier was reliable demand because domestic power needs are limited by underde-

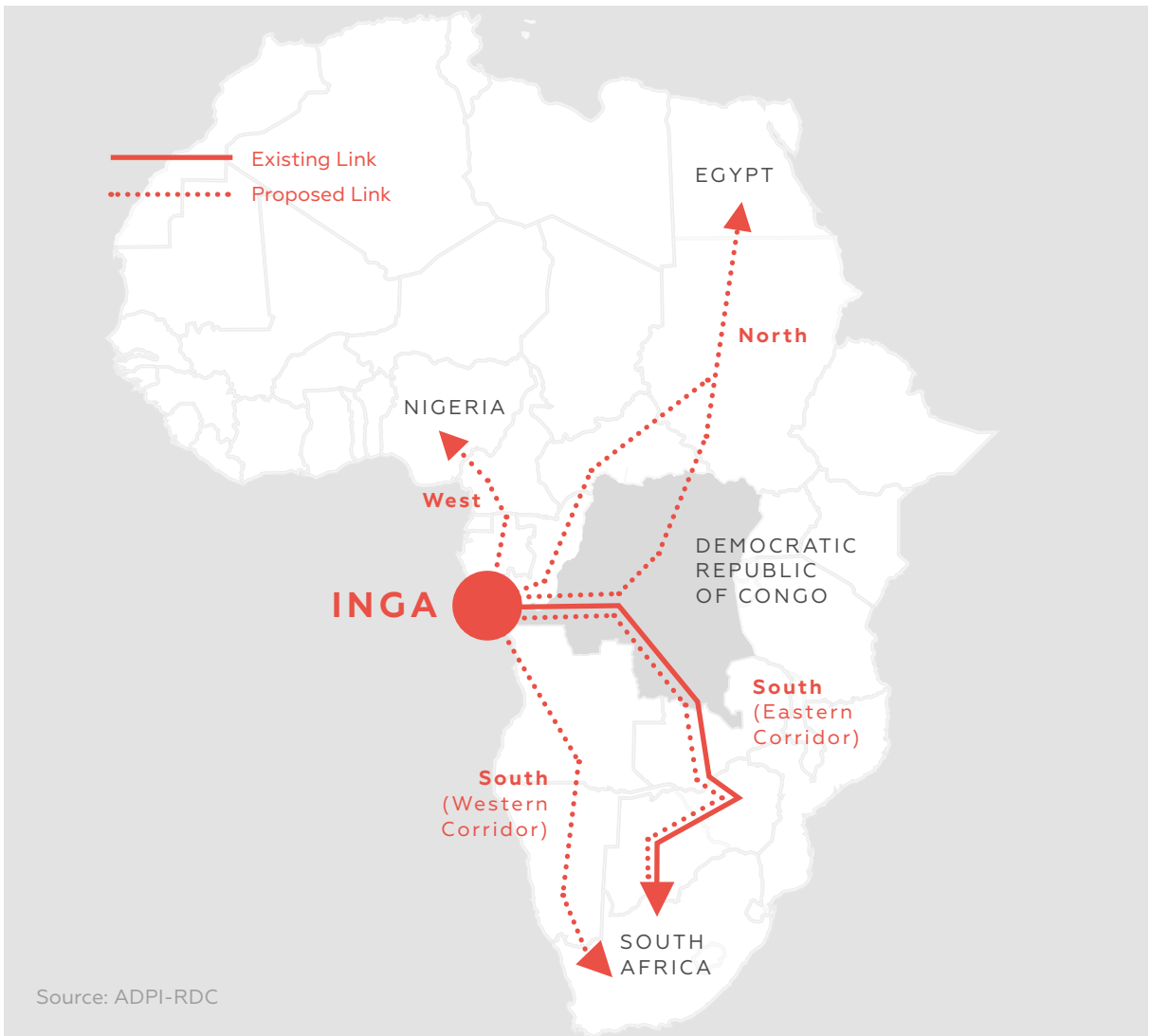
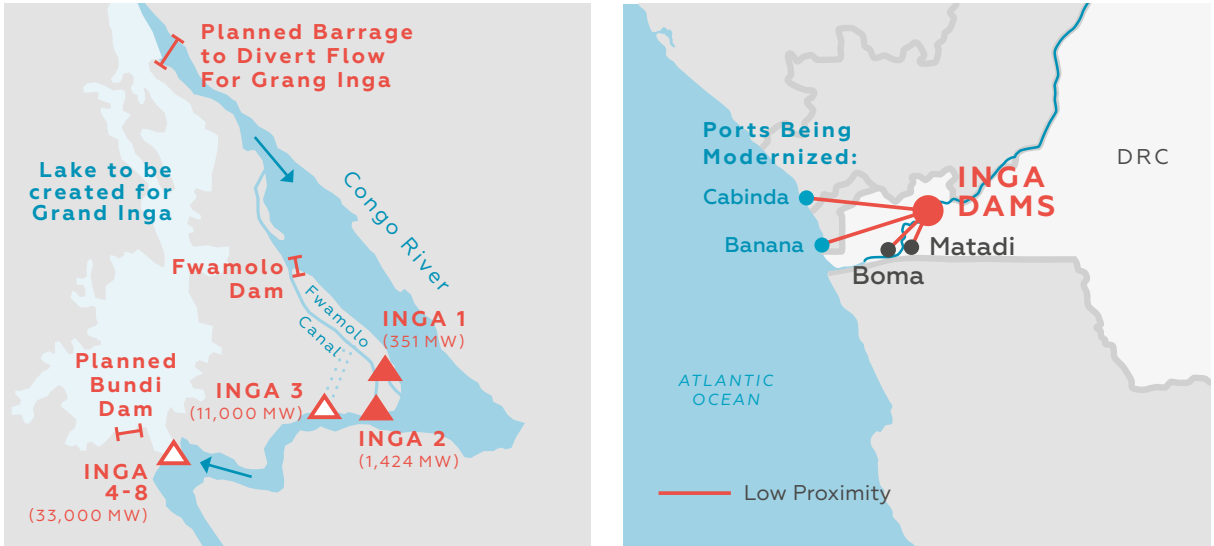
40 International Energy Agency, *Democratic Republic of the Congo data explorer: Total energy supply* (2023): <<https://www.iea.org/countries/democratic-republic-of-the-congo>> (accessed February 2, 2023).

41 The World Bank, *Access to electricity (% of population) – Congo, Dem. Rep.* (2023): <<https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=CD>> (accessed February 2, 2023).

42 Ibid.

43 Banktrack, "Inga III: Congo, the Democratic Republic of the," *Banktrack*, August 19, 2020: <https://www.banktrack.org/project/inga_iii_basse_chute> (accessed February 2, 2023).

Figure 3 – Grand Inga: Hydropower and Hydrogen



velopment and limited grid capacity – both of which make it challenging to justify a large-scale expansion.⁴⁴ Moreover, demand centers are far from Inga 1 and 2, and their need could be better served through localized solar and wind systems. Previous iterations of the Grand Inga project sought to address the lack of demand by proposing to export this electricity through transmission lines to Europe and South Africa. Yet, even with some initial World Bank funding, plans for Inga 3 fell through in the late 2010s,⁴⁵ demonstrating the serious concerns that international donors had with this project.

A Vastly Oversized Project

Recent proposals from Australia's Fortescue Metals Group seek to partially bypass the issue of stranded supply by integrating the production and export of green hydrogen. Electrolyzers situated in the neighboring port cities of Matadi or Banana could transform electricity produced at Inga 3 into hydrogen, which could then be shipped to global markets as green ammonia via the South Atlantic Ocean. A country like Germany could arrange for a long-term offtake agreement that would improve Inga 3's financial viability by stabilizing demand.

Furthermore, hydropower has a competitive advantage over wind and solar because it is not variable. This results in high utilization, which means that each electrolyzer is producing hydrogen more of the time. Nevertheless, adapting the Inga 3 dam for hydrogen production is unlikely to address all the project's issues. Both Inga 1 and Inga 2 ran well over budget and greatly added to the DRC's national debt while failing to generate the expected economic growth.⁴⁶ At 11 GW, Inga 3 would be over four times the size in capacity than the existing dams and with a price tag of USD 6–8 billion. Being considerably larger in scale and cost than both previous projects, the risk of Inga 3 experiencing cost overruns is significant because they are not uncommon for large hydropower projects. An Oxford study assessing

more than 200 large dams found that average project costs were 96 percent higher than initial estimates.⁴⁷

If the Inga 3 projects cost rose to over USD 12 billion, it would near a quarter of national GDP, which could potentially overwhelm the DRC with debt. Moreover, the sheer volume of power remains an issue. The 11 GW from Inga 3 would nearly triple DRC's electricity supply overnight. When compared to the total capacity of electrolyzers installed globally, which in 2021 amounted to only 0.7 GW, it seems very unlikely that local electrolyzers would be able to use anywhere near this much power soon.⁴⁸ Also, building the transmission and conversion infrastructure could prove so costly that Inga 3 hydrogen could turn out to be too expensive to export to Europe.⁴⁹

Fuelling Corruption

The possibility of economic insecurity is a real risk, as the DRC was ranked 169 out of 180 on the corruption perception index in 2021.⁵⁰ Given the enormous scale of the proposed Inga 3 dam, it would be extremely difficult to prevent graft. There are also ethical concerns about exporting power from a highly populated area with low electricity access to serve the needs of wealthy countries like Germany. If mismanaged, the project could become a neocolonial continuation of resource extraction from the DRC. Finally, building an enormous dam raises concerns about biodiversity, the environmental footprint, and the need to resettle affected communities. Given these complexities, any government agency or corporate actor from Germany wishing to get involved in this project needs to ensure that good governance practices are observed and that they give special attention to actively improve local conditions.

44 Jeroen Warner et al., "The fantasy of the Grand Inga hydroelectric project on the River Congo," *Water* 2019, no. 11 (February/1 2019): <<https://www.mdpi.com/2073-4441/11/3/407>> (accessed February 2, 2023).

45 World Bank Group, *Independent Evaluation Group (IEG): ZR-Inga 3 and Mid-Size Hydro Dev. TA (P131027)* (2019): <<https://documents1.worldbank.org/curated/en/880221525389649223/pdf/Congo-Democratic-Republic-of-ZR-Inga-3-and-Mid-Size-Hydro-Dev-TA.pdf>> (accessed February 2, 2023).

46 Jeroen Warner et al., "The fantasy of the Grand Inga hydroelectric project on the River Congo," *Water* 2019, no. 11 (February/1 2019): <<https://www.mdpi.com/2073-4441/11/3/407>> (accessed February 2, 2023).

47 Atif Ansar et al., "Should we build more large dams? The actual costs of hydropower megaproject development," *Energy Policy*, No. 69, (2014), pp. 43–56: <<https://www.sciencedirect.com/science/article/abs/pii/S0301421513010926>> (accessed February 2, 2023).

48 International Renewable Energy Agency, "Hydrogen: Overview," (2023): <<https://www.irena.org/Energy-Transition/Technology/Hydrogen>> (accessed February 2, 2023).

49 Gesine Ames and Joachim Funfgelt, "Displacement and Environmental Destruction: Mega-dam INGA 3 in the Democratic Republic of Congo is no solution for the German Energy Transition," *Okumenisches Netz Zentral Afrika and Brot fuer die Welt* (March 2021): <https://oetz.de/sites/default/files/inga_e.pdf> (accessed February 2, 2023).

50 Transparency International, *Country Data: Corruption Perceptions Index* (2023): <<https://www.transparency.org/en/countries/democratic-republic-of-the-congo>> (accessed February 2, 2023).

A GREEN RESOURCE CURSE?

The dynamics of nature conservation and hydro-power in the DRC show how challenging it can be for foreign actors to simultaneously reach their climate, human rights, and development objectives. In mining, these problems are magnified. The energy transition is creating immense global demand for a secure access to minerals – without them, it simply cannot take place. This creates pressure that can cause foreign actors to compromise their values. Cobalt is one such case. It is indispensable for the global energy transition, and major consumers cannot circumvent the DRC as a supplier despite problematic mining conditions.

Extractives and Security

With an estimated USD 24 trillion in untapped deposits, the DRC is considered the world's most geologically blessed country.⁵¹ It not only has an abundance of traditionally valuable resources like gold and diamonds but also hosts minerals such as

DRC's geological riches have failed to provide the Congolese population at large with prosperity.

copper and cobalt. Copper is the backbone of electrification, while cobalt is central to most lithium-ion battery chemistries. For this reason, major actors like the EU, Germany, and the United States have de-

veloped strategies to secure supplies of these minerals to ensure the security of their transition to net-zero emissions. In terms of copper, the DRC has some of the highest-grade deposits.⁵² In 2021, it was the world's fourth largest producer at 1800 MT.⁵³ In terms of cobalt, the DRC represents roughly half of global reserves and nearly 70 percent of global production. Mineral resources are found everywhere in the country, with gold deposits mostly concentrated in the east and a major copper and cobalt hub located in the southeast along the Zambian border from Kolwezi past Lubumbashi.

Yet these riches have failed to provide the Congolese population at large with prosperity. Some easily accessible high value minerals, such as gold, have long been identified as “conflict minerals” because they are directly used to finance armed groups.⁵⁴ Whereas other minerals have suffered from the resource curse, otherwise a case where a county's rich resources lead to underdevelopment.⁵⁵ While not all resources engender the same dynamics, the resource curse is particularly well documented in the DRC's cobalt industry. This industry has been described as an environment with “private jets landing at the small green and white airport in the mining town of Kolwezi while all around children and families mined for cobalt by hand.”⁵⁶ This image illustrates how urgently international and local actors are driven to access cobalt.

51 Global Edge, “Democratic Republic of the Congo: Economy” *Michigan State University International Business Center*, 2023: <<https://globaleedge.msu.edu/countries/democratic-republic-of-the-congo/economy>> (accessed February 2, 2023).

52 International Trade Administration, “Democratic Republic of the Congo – Country commercial guide: Mining and minerals,” *United States of America Department of Commerce*, December 14, 2022: <<https://www.trade.gov/country-commercial-guides/democratic-republic-congo-mining-and-minerals>> (accessed February 2, 2023).

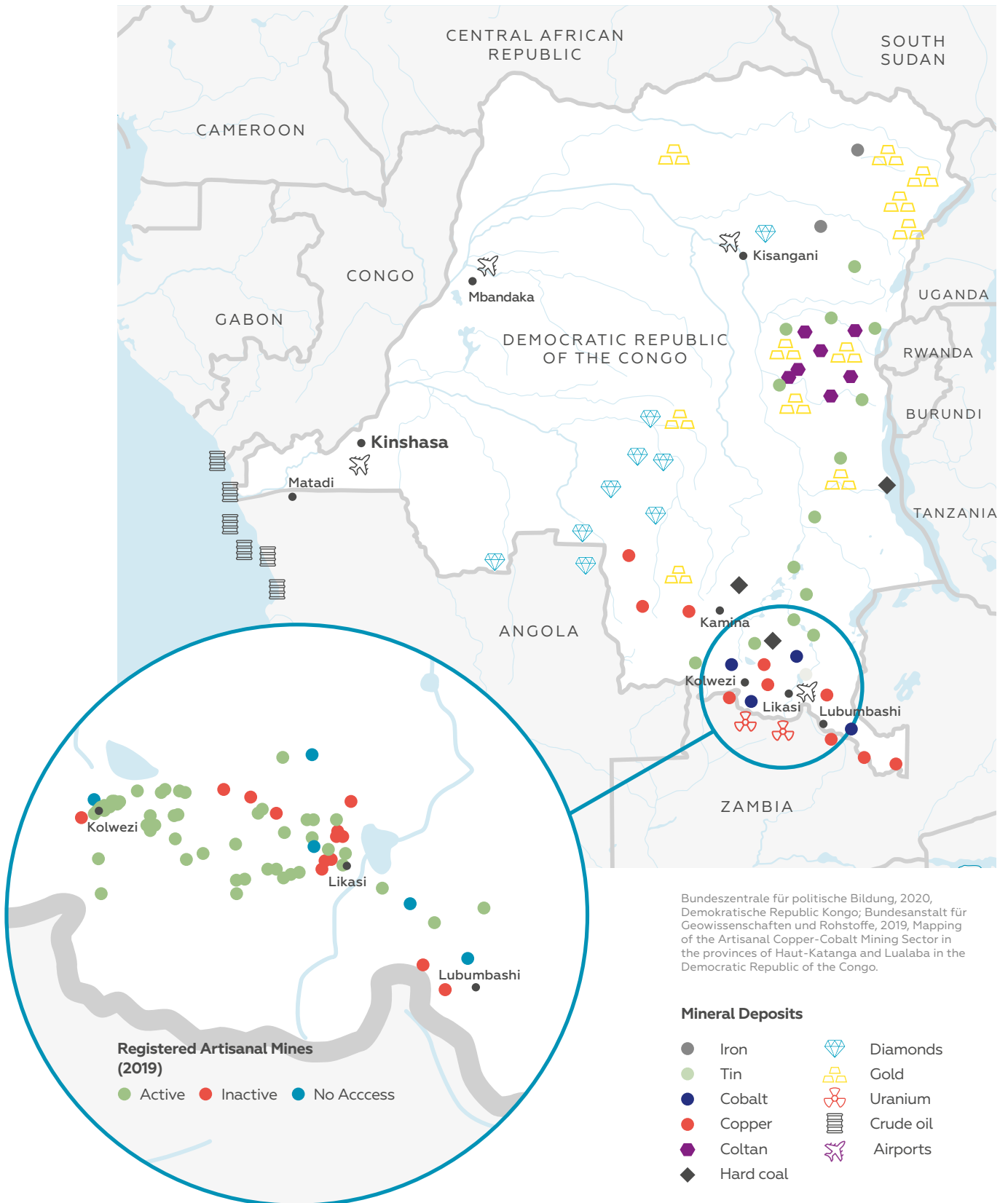
53 Aaron Ross & Estelle Shirbon, “Congo copper, cobalt and gold exports rose in 2021,” *Reuters*, May 24, 2022: <<https://www.reuters.com/world/africa/congo-copper-cobalt-gold-exports-rose-2021-2022-05-24/>> (accessed February 2, 2023).

54 U.S. Government Accountability Office, *Conflict Minerals: Overall peace and security in Eastern Democratic Republic of the Congo has not improved since 2014* (September 2022), <<https://www.gao.gov/assets/gao-22-105411.pdf>> (accessed February 2, 2023).

55 Richard Auty, *Sustaining Development in Mineral Economies: The Resource Curse Thesis* (London, England, 1993).

56 Henry Sanderson, *Volt Rush: The Winners and Losers in the Race to go Green* (London, England, 2022), p. 3.

Figure 4 – Mineral Wealth and Artisanal Mining in the DRC



COBALT MINING: AN EXAMPLE OF THE GREEN RESOURCE CURSE

Cobalt mining in the DRC illustrates how resources necessary for green transformation can fuel conflict between international and local actors. The economic marginalization of local communities and unequal access to attractive cobalt deposits are factors that actually allow industrial activity to thrive. Very little of the money generated by extracting the resource is reinvested locally by the companies or by the government. Most of the disadvantages from this development are felt by marginalized communities who suffer from all the traditionally negative impacts of large-scale mining. This unequal arrangement breeds resentment, not least towards the Congolese government which often has prioritized securing foreign mineral interests over the wellbeing of their own citizens. If the government intervenes aggressively to quell dissent, the conflict potential only grows.

Foreign corporations control the DRC's best cobalt deposits, with the government protecting their concessions without gaining much money from doing so. There are two types of cobalt mining in DRC: Roughly 70 to 80 percent of Congolese cobalt comes from foreign-owned industrial mines, while the remaining 20 to 30 percent is produced at local artisanal and small-scale mines.⁵⁷ The dynamics between these two types of mining undermine human security within the DRC because these mineral rights are lucrative and often engender corrup-

tion. There have been reports of major mining companies bribing Congolese officials for preferential treatment or a discount on mineral rights.⁵⁸ In other cases, large amounts of public money from asset sales simply disappeared.⁵⁹

What is artisanal mining, and how lucrative can it be for local communities? Due to a lack of investment and without the enforcement of labour standards, even children spend twelve hours a day scavenging for cobalt rocks through mining waste before handing over their findings for one or two dollars to local intermediaries who in turn sell the cobalt to Chinese Huayou Cobalt.⁶⁰ These informal 'blood cobalt'⁶¹ mines are dangerous as they frequently collapse, resulting in many deaths, and often render local roads unusable. Nevertheless, many Congolese pursue this work because it pays more than subsistence farming and because the mobile nature of the activity makes it accessible for migrant workers and IDPs.

The negative security implications are particularly visible when migrant miners, who are looking to benefit from high cobalt prices, clash with international companies that leverage their access to the government to secure their exclusive access to large discoveries. This occurred in 2019, when tens of thousands of artisanal miners were forcibly evicted from the area adjacent to the Glencore's Kamoto mine and China Molybdenum's Tenke Fungurume mine in the south-east of Lualaba. In that instance, the Congolese military reportedly burned homes and severely injured numerous people.⁶²

57 Pact "Artisanal and small-scale cobalt mining and the importance of formalization: An explainer with Pact's Mickaël Daudin," Pact (blog), July 25, 2022: <https://www.pactworld.org/blog/artisanal-and-small-scale-cobalt-mining-and-importance-formalization-explainer-pact-s-mickaël> (accessed February 2, 2023).

58 In 2022 Glencore pleaded guilty to bribing Congolese officials for preferential tax treatment. Allegations also exist connecting Glencore to fraudulent practices while forming a joint venture the Katanga Mining Limited. (see Guillaume de Brier & Peter Danssaert, "A fault confessed is half redressed: Glencore pleads guilty, Briefing," International Peace Information Service (June 2022): <https://ipisresearch.be/weekly-briefing/glencore-pleads-guilty-to-bribery/> (accessed February 2, 2023).

59 In 2017 the Carter Center reported that the Congolese state-owned mining conglomerate Gécamines had USD 750 million in asset sales from 2011-2014 that could not be tracked to their accounts. The Carter Center. (2017). (See The Carter Center, *A State Affair: Privatizing Congo's Copper Sector* (November 2017): https://www.cartercenter.org/resources/pdfs/news/peace_publications/democracy/congo-report-carter-center-nov-2017.pdf (accessed February 2, 2023).

60 Amnesty International, "This is what we die for": Human rights abuses in the Democratic Republic of the Congo Power Global Trade in Cobalt (January 2016): <https://www.amnesty.org/en/documents/afr62/3183/2016/en/> (accessed February 2, 2023).

61 Henry Sanderson, *Volt Rush: The Winners and Losers in the Race to go Green* (London, England, 2022).

62 Aaron Ross, "Send in the troops: Congo raises the stakes on illegal mining," Reuters, July 17, 2019: <https://www.reuters.com/article/us-congo-mining-insight-idUSKCN1UC0BS> (accessed February 2, 2023).

Congolese Resources in the Context of the Global Energy Transition

DRC President Félix Tshisekedi regards sustainable mining as a cornerstone of his vision for the DRC to be a 'solution country' for climate issues. Early steps to improve the sector show promise, especially in terms of governance. For example, Congolese courts suspended China Molybdenum from operating the Tenke Fungurume mine while they audited allegations of poor workplace safety and failure to pay appropriate royalties for their concession.⁶³ This coincided with claims that China failed to meet its investment obligations from a 2008 mining agreement that the Congolese government is pushing to renegotiate.⁶⁴ It is a significant step and a demonstration of political will given the fact that China is one of the DRC's largest investors and its companies dominate the mining industry. Nevertheless, DRC officials are showing an increasing willingness to push back against exploitative deals.

The DRC has also expressed commitment to improving the sector's environmental, social, and corporate governance (ESG) standards. It has joined platforms such as the Central African Forest Initiative, which sets higher standards and protection requirements for extraction from forested areas and peatlands.⁶⁵ Cobalt is needed for the global energy transition, and major consumers, such as automotive companies, cannot circumvent the DRC as a supplier. Many companies choose to cut out artisanal and small-scale mines and rely entirely on large-scale mining companies. However, these large-scale actors have a checkered history. Only a small portion of their profits are reinvested in Congo, and some of the companies face allegations of corruption regarding their ties to the government. Initiatives such as the Fair Cobalt Alliance attempt to remedy this by improving and integrating responsible sourcing conditions through the supply chain. However, these initiatives are limited in scale and scope – especially when considering the magnitude of issues in the DRC's extractive sector.

Europe: Between Economic Security and the Ethics of Supply

The European Commission lately proposed an EU directive that would even exceed the new German supply chain law by introducing an obligation to continuously decarbonize global value chains.⁶⁶ Considering recent European efforts to regulate global supply chains, the dirty business of resource extraction in the DRC has the potential to turn into a compliance issue for companies importing cobalt and other resources from the DRC into the EU. The EU, and Germany in particular, seek to enhance environmental and climate protection as well as compliance with human rights along global value chains with the help of regulative actions. While the European Commission has only published a draft directive so far, the German legislator acted as a forerunner and adopted the first supply chain law in the EU that just came into force at the beginning of 2023.

The new German Supply Chain Due Diligence Act ("Lieferkettensorgfaltspflichtengesetz" - LkSG) now obliges larger companies to ensure that their direct suppliers comply with human rights and abstain from certain environmentally destructive actions.⁶⁷ With regard to indirect suppliers, concerned companies are required to take further actions if there is a risk of indirect suppliers not complying with those obligations.⁶⁸ Given that 70 percent of the world's cobalt is extracted in the DRC, where numerous human rights violations have been documented, companies cannot plausibly claim lack of awareness. Therefore, practically every company that falls under the LkSG and relies on cobalt in its production is under pressure to reduce the risk of an indirect supplier not complying with the obligations defined by the new German supply chain regulation. So obviously, there are compliance issues for European companies which rely on the compromised practices of traditional resource extraction in the DRC.

63 Eric Lipton & Dionne Searcey, "Chinese company removed as operator of cobalt mine in Congo," *The New York Times*, February 28, 2022: <https://www.nytimes.com/2022/02/28/world/congo-cobalt-mining-china.html> (accessed February 2, 2023).

64 Staff Writer, "DRC puts mining deal with China under review as targets windfall mineral profits," *Miningmx*, November 23, 2022: <https://www.miningmx.com/news/markets/51515-drc-puts-mining-deal-with-china-under-review-as-targets-windfall-mineral-profits/> (accessed February 2, 2023).

65 Central African Forest Initiative, *Decision of the CAFI executive board meeting: Democratic Republic of the Congo letter of intent and country allocation* (November 2021): <https://www.cafi.org/sites/default/files/2021-11/EB.2021.18%20-%20Letter%20of%20Intent%20with%20the%20DRC%202021-2030%20with%20annexes.pdf> (accessed February 2, 2023).

66 European Commission, Proposal for a Directive on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937, 23 February 2022: https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF (last updated 08.02.2023).

67 Pursuant to § 1 para. 1 LkSG the act applies to companies having their seat in Germany and consisting of at least 3.000 employees. As of 2024 the scope expands to companies with at least 1.000 employees.

68 See § 9 para. 3 LkSG.

Resource exploitation, conflict dynamics between armed groups in Eastern DRC, and climate impacts do not constitute three different sets of challenges. Rather, all these factors intersect as additive drivers fuelling human insecurity in the DRC. Consequently, the Congolese security crisis requires a holistic approach. It is necessary to acknowledge that the unsustainable exploitation of rich resources can provide financing for armed groups and foster conflict over arable land and clean water. The EU regulation on conflict minerals is a first acknowledgment of the role that minerals play in financing some of the armed groups. But it remains a narrow narrative that falls short of addressing the different types of resources involved in conflict dynamics.

CONCLUSION AND RECOMMENDATIONS

Insecurity in the DRC is multifaceted and its causes are in many ways intertwined. Countries like Germany need to develop coherent foreign, development and trade policies that are grounded in the experiences of the sub-national level to effectively contribute to sustainable peace. As highlighted above, climate impacts, vulnerability, and social inequality amidst an ongoing armed conflict in Eastern-DRC intersect as cascading effects and lead to a complex situation jeopardizing human security on multiple levels. Feminist Foreign Policy, as it has just been adopted by the German government, has the potential to disrupt this vicious cycle by centring human security from an intersectional perspective and offering an important tool of orientation. Germany's engagement in the DRC also serves as a test case for its strategies on security sector reform, dealing with the past, and transitional justice, which were jointly published by the Federal Foreign Office, the Ministry for Development Cooperation, the Ministry of the Interior, and the Ministry of Justice.⁶⁹ When furthering development cooperation with the DRC in the areas of climate policy, diplomacy, or finance, the core lessons of these strategies should be taken into account to minimize or avoid policy incoherence and potential adverse effects of climate action and environmental protection.

While a comprehensive solution to the DRC's problems remains elusive, there are concrete measures that Germany can take. The following recommen-

dations, building on best practices that, while not drawing a blueprint, could support pathways for peace and sustainability against the backdrop of a changing climate:

1 Combine Peace Efforts with Environmental Protection

Establish and enforce standards: Counterintuitively, there is a risk of even higher deforestation rates if stability in the DRC were to improve. Therefore, peace negotiations need to include elements of environmental mediation and inclusive forest management. To this end, regional initiatives like the Central African Forest Initiative should be strengthened. Intensified trade partnerships with the DRC should pressure the government to improve national legislation and enforcement of environmental protection by defining social and environmental standards. These standards should be regularly revised and raised.

Avoid further securitization of national parks: National parks are increasingly becoming securitized as armed groups occupy forest territories and individuals, as well as organized wildlife traffickers, enter national parks for wildlife extraction. Some parks, such as the Virunga National Park, employ armed eco-guards to protect the forest. The creation of positions for more female eco-guards should be supported as this has the potential to help reduce gender-based violence of armed units. In smaller or less militarized reserves and parks, there are still opportunities to avoid armed eco-guards by fostering community outreach and alternative sources of income. Less rigorous means of conservation and forest management are preferable. Community forests, where villagers receive training to take over the management of natural resources from state and commercial actors, are a promising example.

Support regional research: Climate impacts and social and environmental conditions vary widely across the DRC. Although highly affected by climate change, a lack of sufficient data makes it difficult to analyse regionally downscaled climate impacts in the DRC. Yet, such data is indispensable to implement foresight infrastructure to better adapt Congolese society against climate impacts. Such data infrastructure and research need to be collected in the DRC itself. Regional research needs international financial support and a greater exchange between regional and inter-

69 Auswärtiges Amt, "Sicherheit, Rechtsstaatlichkeit, Vergangenheitsarbeit: Grundlagen der Stabilisierung in Krisengebieten," September 18, 2019.

national research. International actors must take regional expertise into account when coordinating climate protection and adaptation measures. It is also important to support research collaboration with other Southern Hemisphere countries with vast tropical rainforests, such as Brazil and Indonesia to strengthen knowledge exchange and capacity building.

Focus on nature-based solutions: Many outstanding examples of sustainable local solutions to reconcile farming activities with environmental protection exist. Agroforestry projects in which farmers restrict their use of local wood to a sustainable level and cultivate seeds in a short-rotation system integrated into local forests have been particularly successful. Such projects create financially independent local communities that operate on a sustainable basis. Donors need to define indicators so that they can identify similar projects and help local communities gain economic independence by rebuilding and/or protecting their ecosystem. The EU must make sure to take the local needs of farmers into consideration when drawing up its planned EU Deforestation Regulation.

2 Establish Resource Partnerships Centred on Human Development

Make use of effective supply chain regulation: The energy transition is creating a high demand for material resources found in the DRC. As supply constraints arise, there is a growing risk of encouraging mining practices that are unsustainable and violate human rights. To keep that from happening, Europe needs to have an effective and well-balanced supply chain regulation. The effectiveness of and compliance with the LkSG, the German Supply Chain Act, shall be monitored, and non-compliance needs to be strictly sanctioned. In the case of cobalt mining, where standards are not yet met, due diligence means that German companies must actively get involved to improve labour conditions as standards are not yet met. These companies can also play a vital role in communicating to the Congolese government that there are European industrial actors who are willing to pay a premium for ethically sourced minerals.

Reward demonstrated improvements in formalizing artisanal mining: Conditions in artisanal and small-scale mining in the DRC are problematic, and it is highly improbable for them to reach international standards in the near future. Nevertheless, artisanal and small-scale mining represents the primary source of income for many families, and a boycott would lead to further precarity. In this case, it may be better for long term development to devise a series of midterm benchmarks which would allow artisanal miners to reach European and international standards progressively. Progress made toward formalizing the sector should be rewarded over a set period of time. A first step could be to prevent children and pregnant women from working on the sites. The DRC should receive support for the creation of official “artisanal mining zones,” in which cooperatives would have the rights to mine. This would also reduce the potential for conflict between artisanal and industrial miners. Germany should continue its capacity-building efforts to improve oversight and control and redouble its efforts to improve the conditions in upstream mining projects across the DRC.

Support gender equality: Unions of women and other marginalized groups devoted to social justice and gender equality need the full support of international actors. Especially states funding humanitarian activities should focus on projects concentrating on societal change within the DRC. As one of the largest international donors in the humanitarian sector, Germany should establish more collaborations with civil society organisations focusing on gender justice and equality in the DRC.⁷⁰

3 Coordinate European Efforts to Align Human Security Improvements, Environmental Goals and Resource Partnerships

Integrate European Efforts by Utilizing COAFR: To establish an integrated approach, the European Union should use its Africa Working Party (COAFR)⁷¹ to define priorities and build partnerships that can help coordinate activities regarding climate adaptation, development, and the EU’s Common Security and Defense Policy (CSDP). In combination with the EU’s new funding stream “Neighbourhood, Development and International Cooperation Instru-

70 As an example, UN Women DRC together with the Women’s Peace and Humanitarian Action Fund are directly collaborating with Congolese NGOs and could provide support. See UN Women Africa, Congolese NGOs continue to commit to the protection of women and humanitarian action, 2020, <https://africa.unwomen.org/en/news-and-events/stories/2020/11/congolese-ngos-continue-to-commit-to-the-protection-of-women-and-humanitarian-action> (last updated 09.02.2023).

71 The Africa Working Party of the Council of the European Union is responsible for the management of EU external policy towards sub-Saharan Africa, including its 46 countries, the African Union and other sub-regional organisations.

ment (NDICI – Global Europe)” which aims to spend 30 percent of resources in climate action, can serve as an important catalyst to finance and kick start several of the initiatives for capacity building, environmental protection, and partnerships described above.

Intertwine access to renewable energy and resources partnerships: Germany and the EU should work with international partners such as the G7 to consider establishing a “Just Energy Transition and Resource Partnership” for the DRC. That partnership should balance financing for decentralized renewable energy projects that improve energy access. At the same time, it should lay the governance groundwork for larger infrastructure projects, without which large-scale hydrogen projects are bound to fail.

Establish a UN climate security advisor role for the MONUSCO mission and UNCT: Given the magnitude of the DRC’s climate and environment-related challenges, MONUSCO and the UN Country Team (UNCT) would benefit from a dedicated climate and security advisor to help identify climate-related security risks, coordinate UN and government-based responses to address the climate and biodiversity dimensions in the ongoing conflict, and identify pathways to mitigate climate security risks. Close coordination with the UN Office for Central Africa (UNOCA) and ECAS, the AU, and the EU will be important to synergise responses across actors and increase effective implementation. Germany could support the UN’s work on climate security in the DRC by providing long-term funding for a dedicated climate security advisor.

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