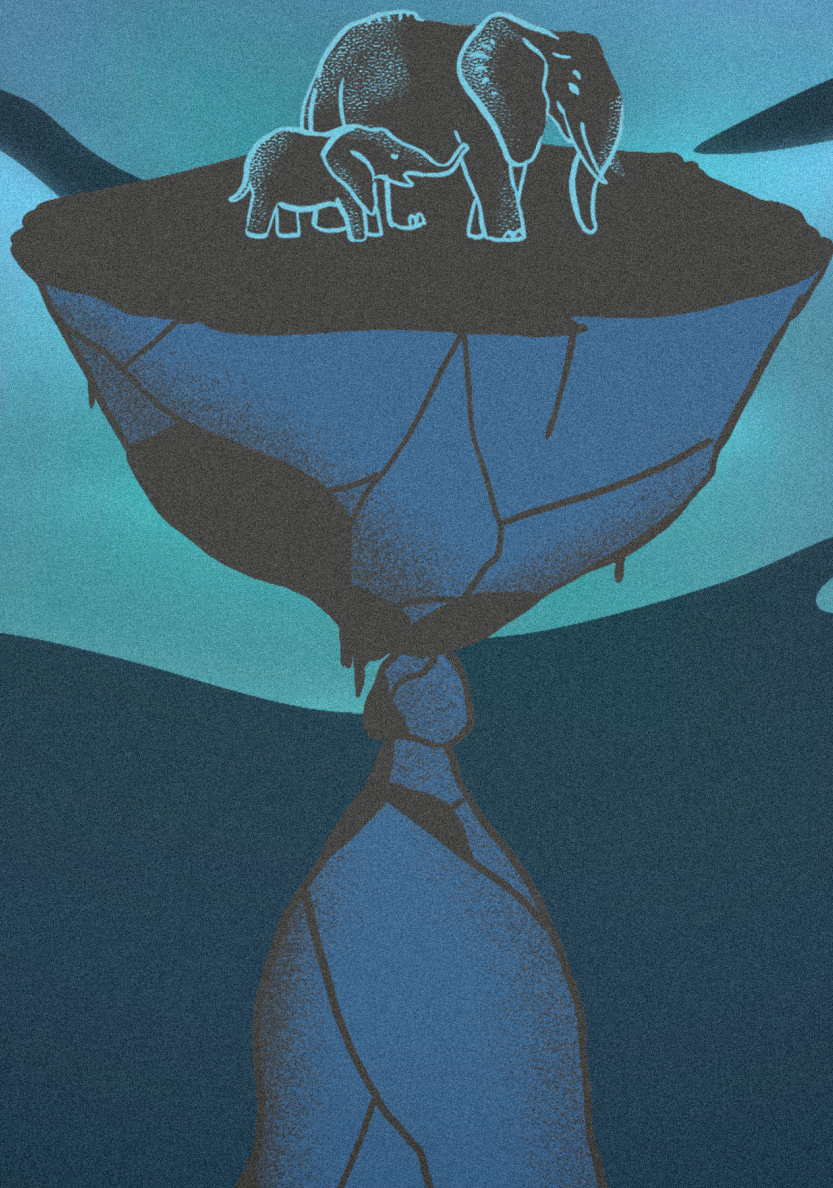


# Buffered Extraction

How an Increase in Foreign-Owned Mining Concessions  
Threatens Protected Areas and Local Stability in the DRC





# Acknowledgements

## About C4ADS

C4ADS ([www.c4ads.org](http://www.c4ads.org)) is a 501(c)(3) nonprofit organization dedicated to data-driven analysis and evidence-based reporting of conflict and security issues worldwide. Our approach leverages nontraditional investigative techniques and emerging analytical technologies. We recognize the value of working on the ground in the field, capturing local knowledge, and collecting original data to inform our analysis. At the same time, we employ cutting edge technology to manage and analyze that data. The result is an innovative analytical approach to conflict prevention and mitigation.

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The mention of any individual, company, organization, or other entity in this report does not imply the violation of any law or international agreement, and should not be construed to so imply.

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# Executive Summary

A rapid increase in mining concessions granted to foreign entities near protected areas in the Democratic Republic of the Congo (DRC) poses a risk to the biodiversity and stability of the region. Mining, especially for copper, gold, and cobalt, is an extractive process that, when unregulated, risks local ecosystems and biodiversity and threatens local socioeconomic stability.

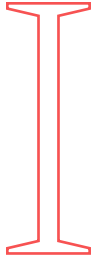
45%

of active  
foreign-owned  
concessions  
within 10km of  
protected areas  
appear to be  
Chinese-owned

Since 2015, the DRC Ministry of Mines granted the majority of foreign-owned mining concessions within, adjacent to, or in close proximity to protected areas to enterprises that publicly available information indicates are owned or funded by Chinese nationals. Among mining concessions within 10 kilometers (km) of protected areas in the DRC, at least 20% of all active concessions and 45% of active foreign-owned concessions appear to be Chinese-owned. Furthermore, this number appears to be increasing, with a 69% average year-on-year increase in new mining concessions granted to Chinese-owned enterprises within 10 km of protected areas since 2015.

This brief examines the potential risks of the increase in foreign-owned mining concessions to biodiversity and stability in the DRC, focusing on the rise in Chinese mining activity and the documented association of Chinese mining enterprises with illicit activity.

Ultimately, DRC policymakers should be aware of this trend and be prepared to enact more stringent regulations to preserve the integrity of protected areas in Africa's second-largest country. Furthermore, the Chinese government should maintain consistency with its published guidelines and ensure that it holds its nationals accountable for the exploitation of natural resources abroad or risk associating consumers of its electronic products with environmentally unsound practices in Africa.



# Introduction

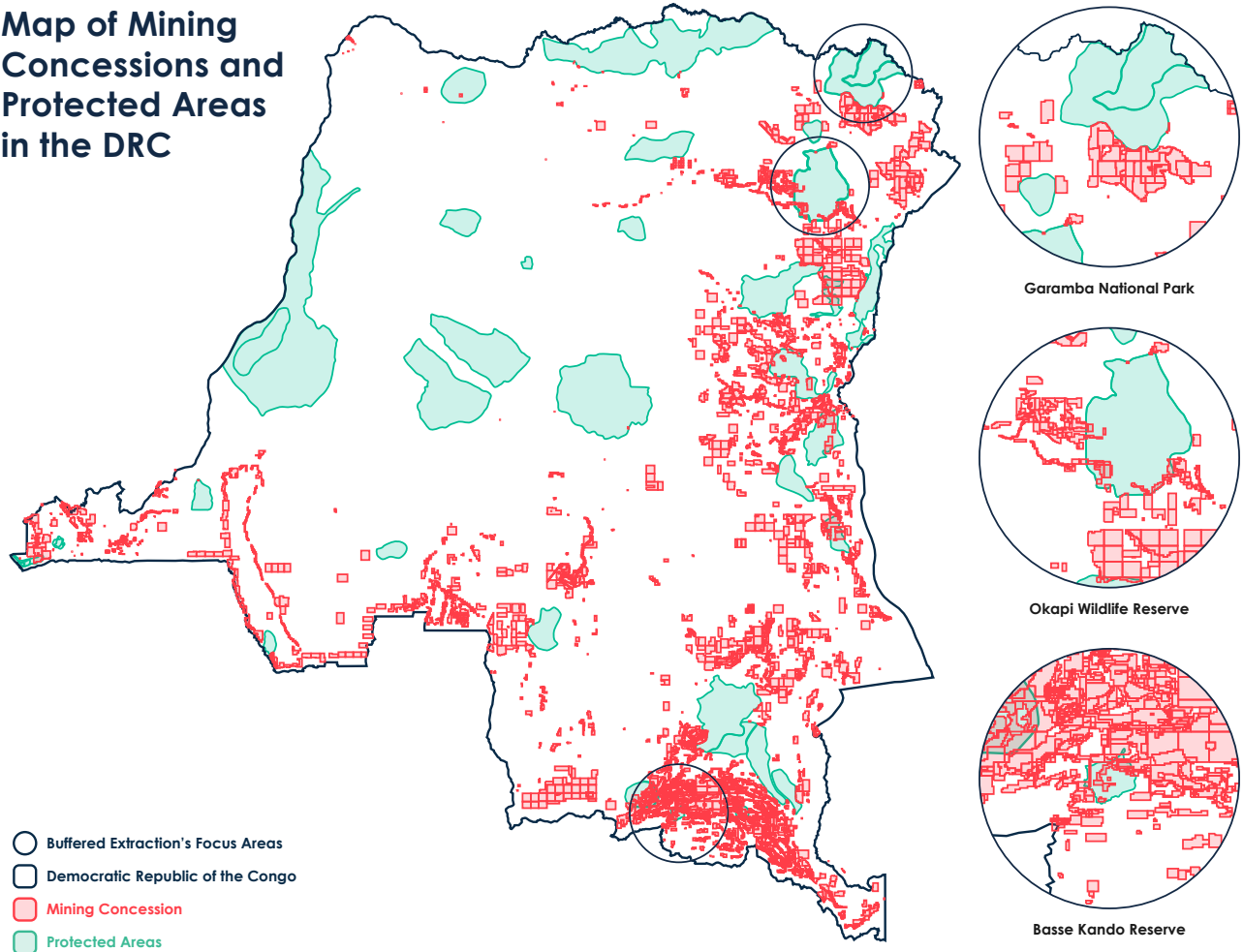
In 2022, the Wildlife Conservation Society claimed in its annual report that deforestation within the DRC's Okapi Wildlife Reserve was 90% lower than in adjacent areas, despite mining occurring within and around the protected area.<sup>1</sup> While this number sounds promising, it also highlights the complex issue of balancing economic development and biodiversity in a mineral-rich jurisdiction. Mining concessions are increasing in proximity to the DRC's protected areas, especially in the eastern part of the country. A significant number of these concessions are owned and operated by foreign entities. An increase in demand for this region's minerals—particularly gold, copper, and cobalt—by foreign-owned mining companies represents a risk factor to the preservation of biodiversity in this region, which contains a large swath of the Eastern Afrotropical global biodiversity hotspot and nearly 11,000 unique wildlife species.<sup>2</sup>

69%

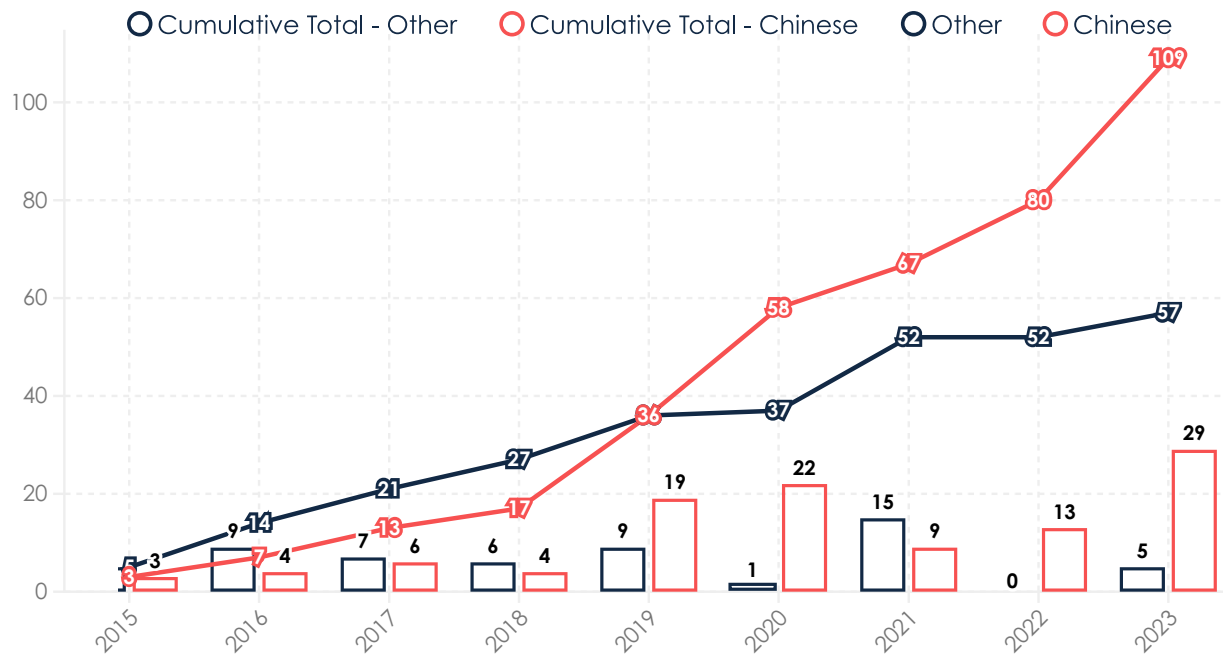
average year-on-year increase in new mining concessions within 10km of protected areas granted to Chinese-owned enterprises

In particular, the number of Chinese-controlled mining concessions within 10 km of DRC protected areas has grown an average of 69% annually since 2015. This brief explores how this growth poses a significant threat to the DRC's biodiversity through the disruption of contiguous natural landscapes, destabilization of socioeconomic conditions, and facilitation of natural resource crime. These effects also contradict China's foreign investment guidelines, despite it being one of the few major global powers with a perceived capability to exercise oversight over the actions of its national entities. Meanwhile, Chinese-owned mining concessions in the DRC have been reported to be associated with environmental degradation,<sup>3</sup> illicit encroachment into protected areas,<sup>4 5</sup> and trafficking in wildlife and natural resources,<sup>6</sup> as well as illegal mining,<sup>7 8</sup> human rights violations,<sup>9 10</sup> and corruption in local government.<sup>11</sup>

## Map of Mining Concessions and Protected Areas in the DRC

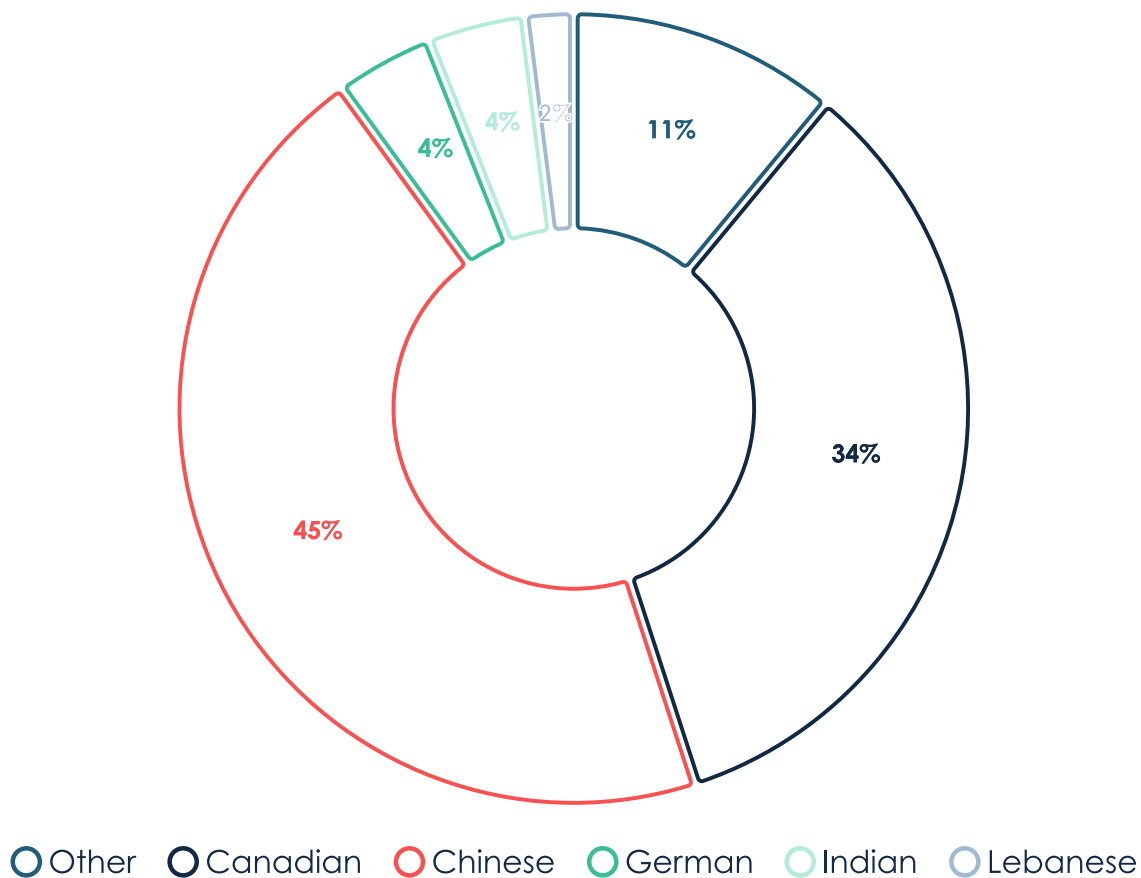


## Number of New Concessions Granted to Foreign Entities within 10 km of Protected Areas, 2015-2023



Since a 2008 deal in which China reportedly pledged nearly US\$6 billion in infrastructure<sup>12</sup> in exchange for 68% ownership of a joint venture to mine copper and cobalt,<sup>13</sup> Chinese enterprises have secured concessions in the DRC at an increasingly rapid pace. China's interest in the DRC's minerals is directly linked to its push to become a world leader in the manufacturing of consumer electronics, including mobile phones, solar panels, and electric vehicles.<sup>14 15</sup> In particular, the pursuit of copper, for electric vehicles and mobile phone manufacturing,<sup>16 17</sup> and cobalt, essential in lithium-ion batteries,<sup>18</sup> has led to a reported 70% of total mining concessions in the DRC being Chinese-owned as of 2021.<sup>19</sup> Global consumer demand for Chinese-produced electric vehicles is expected to continue to increase rapidly in the coming years,<sup>20</sup> and already accounted for an estimated 60% of total global sales in 2022.<sup>21</sup> Similarly, China also produces up to 70% of the world's lithium-ion batteries,<sup>22</sup> and Chinese-produced mobile phones already held more than 50% of the total global market share as of the first quarter in 2024.<sup>23</sup> This continued increase in demand for electronics exposes global brands and end-consumers to a mineral supply chain that potentially poses a risk to sensitive ecosystems in the DRC.

**Percentage of Positively Identified Foreign-Owned Concessions within 10km of DRC Protected Areas**



Chinese companies are not the only foreign entities that own mining concessions in proximity to protected areas. Public records indicate that Canadian-owned entities, led by Ivanhoe Mines and affiliated subsidiaries, remain associated with at least 16% of mining operations within 10 km of protected areas. However, the number of new mining concessions associated with Canadian companies has remained low in recent years, with only 21 concessions granted within 10 km of protected areas since 2015. In 2018, the DRC government adopted a new mining code to increase government royalties in the mining industry,<sup>24 25</sup> which was opposed by foreign—especially Western—companies.<sup>26</sup>

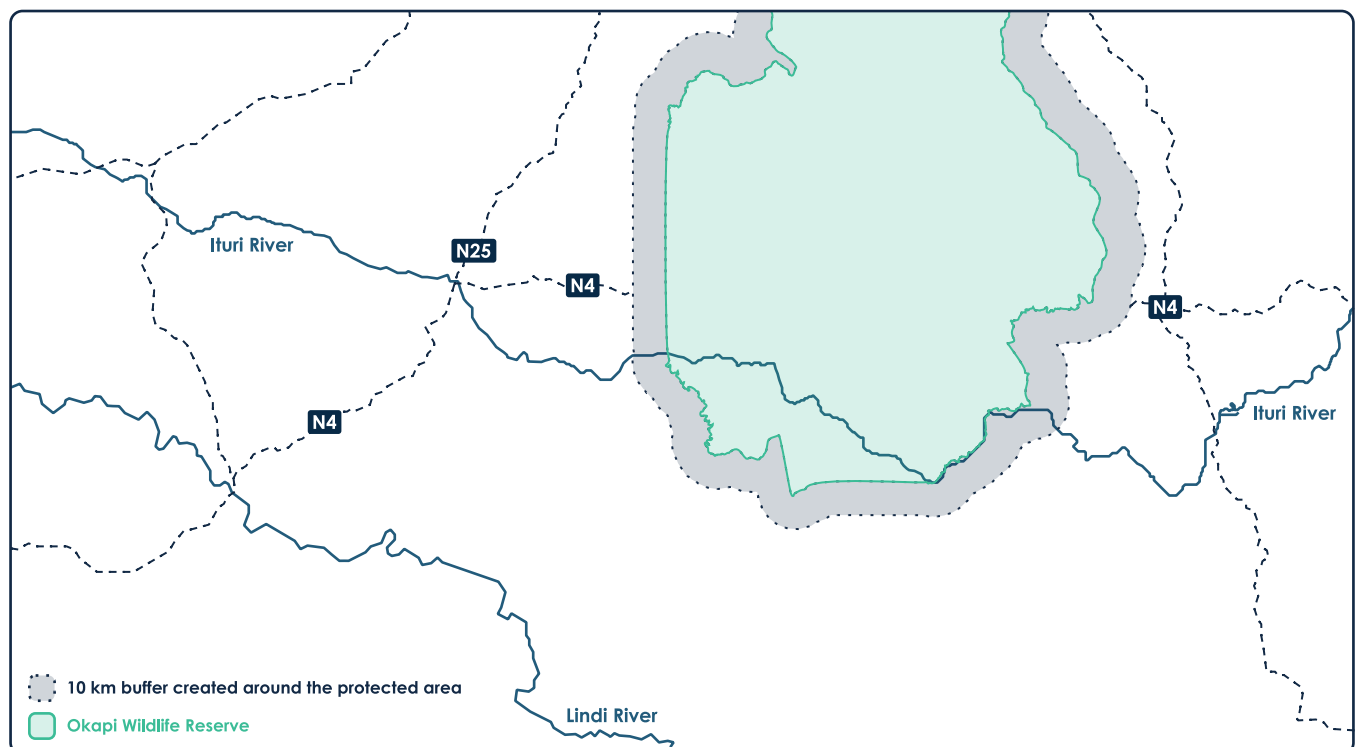
This brief intends to highlight the negative impacts of foreign-led mining on biodiversity and local communities. Chinese mining concessions are, by far, the most prevalent foreign-owned mining concessions in the area of concern, and considerable recent public reporting also exposes the illicit activity of Chinese enterprises in the DRC's mining sector. A closer examination of Chinese mining activity through the lens of biodiversity and human rights is thus useful to critique the effects of foreign-led mining as a whole.



## Methodology

C4ADS gathered geospatial data and information on mining concession ownership from the DRC's official mining cadastre,<sup>27</sup> then used corporate registry information and public reporting to identify the nationality of the directors or financial backers as reported by government and media sources. C4ADS referenced a list of 3,346 existing mining concessions, current to the end of March 2024, from the DRC's official mining cadastre in both tabular and geospatial format. C4ADS also used current geospatial data on protected areas in the DRC from Protected Planet, the online platform of the World Database of Protected Areas, a partnership between the International Union for Conservation of Nature (IUCN) and the United Nations Environmental Programme.<sup>28</sup> Protected areas in the DRC referenced in this analysis include national parks, natural reserves, and hunting reserves.<sup>29</sup> Hunting reserves are classified as Category VI in the IUCN classification of protected areas, which allows for designated sustainable use of natural resources.<sup>30 31</sup> However, hunting reserves were included in this analysis since, in the DRC, protected areas classified as hunting reserves are legally designated only to allow for regulated hunting activities<sup>32</sup> and still act as critical protected areas for biodiversity.<sup>33</sup>

Using standardized geospatial projection of mining concession data<sup>34</sup> and the boundaries of protected areas in the DRC,<sup>35</sup> a 10 km buffer was created around each protected area polygon. A list of 606 active DRC mining concessions operated by 221 unique entities that intersect with this buffer was extracted. The 10 km distance was selected as a standard measurement consistent with previous studies of mining encroachment on protected areas<sup>36</sup> and represents a reasonable area of the effect of mining activity on a local ecosystem as documented in prior studies on the impacts of mining on biodiversity.<sup>37</sup>



It is likely that the percentage of mining concessions located near protected areas, as stated in this brief, is underestimated due to decisions to exclude certain geospatial data:

- ➔ The Protected Planet database is used for geospatial data on protected areas due to its official status. However, certain legally designated reserves—including Basse Kando Hunting Reserve in the Southern DRC—do not appear in this dataset. Nevertheless, Basse Kando Reserve is still referenced in this report as a case study because active mining concessions cover 78% of the designated reserve.<sup>38</sup>
- ➔ Sites listed individually as Ramsar-classified wetlands in the Protected Planet database were also excluded, but protected areas designated as both a legally protected area and a Ramsar site were included. Areas solely listed as Ramsar sites are not necessarily legally designated and enforceable within the jurisdiction they have been classified in.<sup>39</sup>
- ➔ Only protected areas physically located within the administrative boundaries of the DRC were used. Therefore, some mining concessions that do not appear in this analysis are located within 10 km of DRC protected areas but are across the border in adjacent jurisdictions, such as Zambia or Uganda.

The analysis in this brief is also limited in that it was not possible at the time of writing to determine ultimate ownership using publicly available information for 55 of the 221 entities surveyed. Some additional DRC-owned companies are likely funded by Chinese investment, as seen in reference to the Congolese-owned company Intermines SPRL being “made possible thanks to the partnership we were able to negotiate with Chinese businessmen” as listed on the LinkedIn profile for Intermines SPRL’s former director.<sup>40</sup> Finally, it has been previously reported that Chinese mining companies sometimes engage in semi-industrial mining operations under the shell of a local artisanal mining collective.<sup>41</sup> Thus, Chinese involvement, or that of other foreign-owned companies, in concessions within 10 km of protected areas may be more pronounced than an open-source investigation alone can identify.

## Contradictions between Chinese Foreign and Domestic Environmental Policy

China has signaled its understanding of the harmful effects unregulated mining can have on protected areas and local communities in recent decades through the adoption of domestic laws and initiatives designed to preserve the integrity of its biodiversity and wild spaces. While China has established more than 11,800 domestic protected areas since 1956,<sup>42 43</sup> the Chinese government has placed added emphasis on conservation in recent years by constructing ten new national parks designed to limit or exclude economic activity from sensitive ecosystems and biodiverse regions.<sup>44</sup>

Mining inside protected areas is not strictly prohibited in China.<sup>45</sup> There is a permit system that requires evaluation by State Council-approved authorities for the provision of these mining rights.<sup>46</sup> However, the official policy has been to remove mining rights in National Nature Reserves since 2017,<sup>47</sup> and although this process is incomplete, it includes earnest policy discussion through government-approved publications on the problem of removing and properly compensating for mining concessions.<sup>48 49</sup> By 2018, at least 20 of China's 23 provinces had reportedly introduced plans to remove mining rights from nature reserves.<sup>50</sup> In January 2023, the Sichuan provincial government also announced it had completely withdrawn all mining rights from the flagship Giant Panda National Park project.<sup>51</sup> In May 2024, China introduced new standards in a draft to revise its mining law, which promotes the preservation and restoration of ecosystems affected by mines, including those affecting forests and grasslands as well as farmland and designated nature reserves.<sup>52 53</sup> These efforts clearly illustrate the intent of the Chinese central government and relevant local governments to minimize the impact of mining on protected areas.

This domestic policy discussion and movement to regulate all mining in and near protected areas stands in stark contrast to the increasing activity of Chinese-owned mining enterprises in and around the protected areas of the DRC. Yet, the Chinese Ministries of Environment and Ecology and Commerce addressed this issue when it released new guidelines for overseas investment projects in 2022 that encouraged Chinese firms to adapt to consistent and higher environmental standards in foreign countries where environmental governance capacity is low.<sup>54</sup> This should include, as stated in Chinese mining law, consideration of the effects of mining on the environment and local communities.

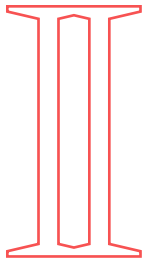


## Chinese Mining Law and Protected Areas

According to the 2022 overseas investment guidelines released by the Chinese Ministries of Environment and Ecology (MEE) and Commerce (MOFCOM), Chinese firms should adopt higher environmental standards in countries with low capacity for regulation or enforcement.<sup>55</sup> Chinese domestic regulations that Chinese mining firms operating in the DRC could implement include:

- ↪ **Article 10** of Chinese mining law states that mining enterprises should “take into account the interests of the ethnic autonomous areas, make arrangements conducive to the economic construction of the ethnic autonomous areas, and take care of the production and life of the local ethnic minority people.”<sup>56</sup>
- ↪ **Article 20** of Chinese mining law states that mining is prohibited in protected areas without the consent of all relevant authorized departments.<sup>57</sup>
- ↪ **Article 32** of Chinese mining law states, “If cultivated land, grassland, or forest land is damaged due to mining, mining enterprises shall take reclamation and utilization, planting trees and grass, or other utilization measures according to local conditions.”<sup>58</sup>
- ↪ **The 11th Amendment** to Chinese Criminal Law specifically criminalizes the destruction of protected areas.<sup>59</sup>

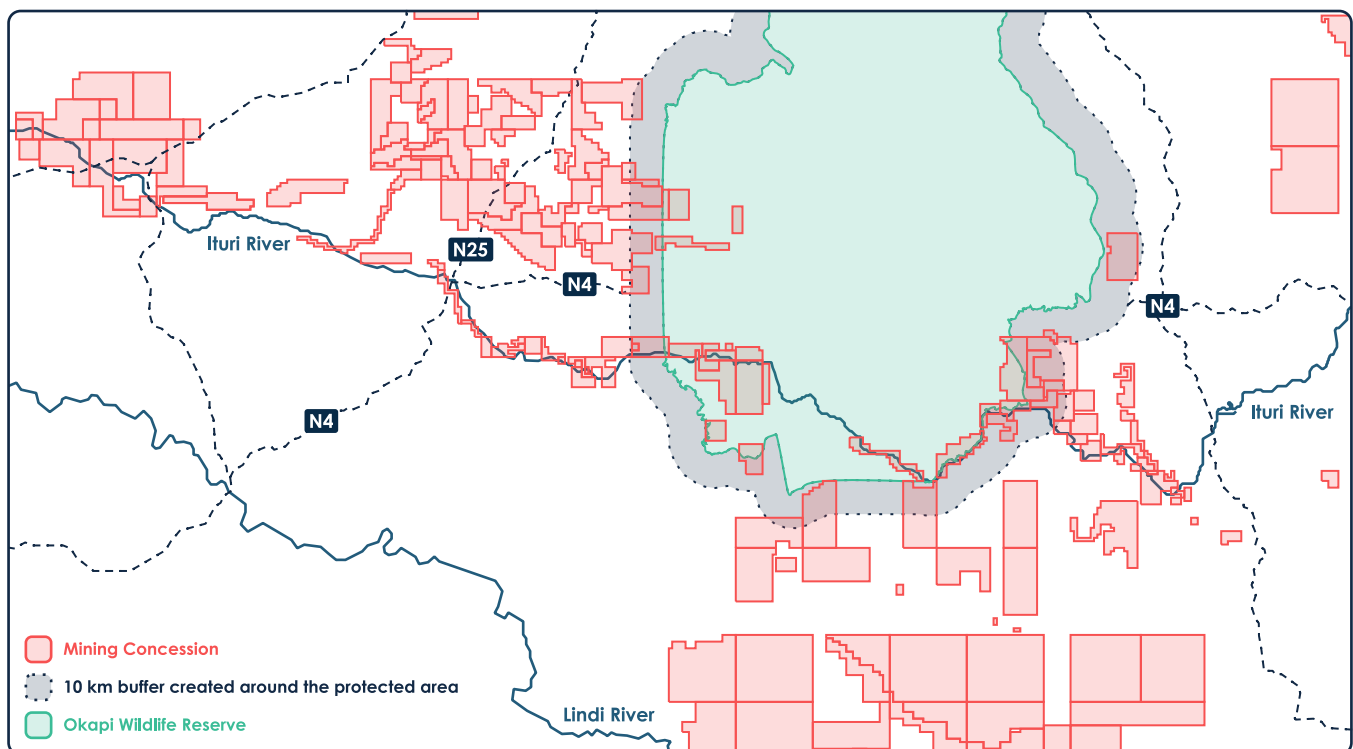
The consistent Chinese government response to accusations of illicit activity by Chinese firms abroad is that those companies are instructed “to abide by local laws and regulations.”<sup>60</sup> However, many countries in Sub-Saharan Africa, including the DRC, often do not have the capacity<sup>61 62</sup> or will<sup>63</sup> to enforce environmental regulations.<sup>64</sup> It is unclear how histories of illicit activity among Chinese mining enterprises are considered when the DRC Ministry of Mines grants mining concessions. To maintain the standards set for itself in its homeland, the Chinese government has an acute opportunity in the DRC to apply stricter standards to its mining firms operating in sensitive ecosystems.



## Direct Effects on Biodiversity: Pollution, Encroachment, and Natural Resource Exploitation

The higher concentration of natural resources may lead foreign and domestic enterprises to establish mining concessions in proximity to protected areas. Mineral deposits are positively correlated with plant species richness<sup>65</sup> and frequently overlap with critical ecosystems.<sup>66</sup> The increase in mining activity adjacent to protected areas, as reported in this brief, represents a potentially dangerous trend due to the established environmental effects of mining, further illicit encroachment into protected area boundaries, and novel pathways for exploiting natural resources. As the figure below shows, mining concessions can have a crowding-out effect on protected areas that can lead to negative impacts on biodiversity.

While the direct effects of mining on the environment are primarily associated with land use change, deforestation, and downstream pollution,<sup>67</sup> environmental impact assessments required for mining concessions in the DRC<sup>68</sup> do not typically include strong assessments of the impact on biodiversity.<sup>69</sup> Biodiversity in protected areas is subject to edge effects, which are changes in biodiversity and the overall ecosystem that result from an abrupt change in land use. Protected areas in the DRC already contain a significant portion of disturbed and secondary forests,<sup>70</sup> making effective planning of buffer zones, or “areas between core protected areas and the surrounding landscape



[...] which protect the network from potentially damaging external influences,”<sup>71</sup> even more critical. In addition, mining operations themselves—as well as the associated infrastructure of roads, power lines, and buildings that come with them—can impede the flow of migratory species and restrict population gene flows.<sup>72</sup> Deforestation, as forest is cleared for open mining pits and roadways are constructed for mining vehicles, leads to further habitat fragmentation<sup>73</sup> and provides easy access for additional third parties deeper into sensitive ecosystems where they may not previously have been able to penetrate.<sup>74</sup>

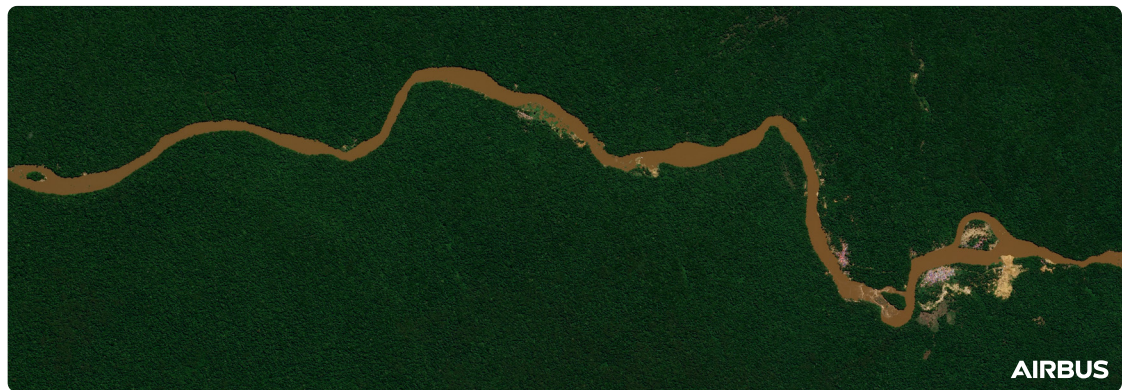
## Protected Area Encroachment

Mining that occurs illicitly within the boundaries of protected areas exacerbates the direct effects of mining on ecosystems and biodiversity even further. The DRC mining code adopted in 2018 prohibits any kind of mining activity, from industrial to artisanal, in protected areas designated by the prime minister and the Council of Ministers.<sup>75</sup> There is, however, mounting evidence that a significant amount of Chinese-backed mining is happening illegally in and around protected areas in the DRC. On multiple occasions, Chinese-owned mines have been accused of polluting rivers<sup>76</sup> and illegal dredging using semi-industrial equipment,<sup>77 78</sup> including within the boundaries of established protected areas.

The most high-profile case made headlines in 2021,<sup>79</sup> after a public backlash occurred based on reports that Chinese gold mining firms were operating on concessions granted within the legal boundaries of the Okapi Wildlife Reserve (OWR),<sup>80 81</sup> a designated protected area and UNESCO World Heritage Site.<sup>82</sup> At least one of the companies originally accused of operating within the OWR boundaries, Kimia Mining Limited, reportedly then formed a new holding company, Kimia Golin Orientale Resources (KGOR)<sup>83</sup> with two other Chinese mining companies in November 2021.<sup>84 85</sup> KGOR told a UN Panel of Experts on the DRC that it was “created to respond to the needs of several small mining companies,”<sup>86</sup> possibly in response to public pressure from mining in the OWR. According to Congolese government records, the three direct subsidiaries of KGOR—Kimia Mining Limited, Orientale Ressources Congo, and Golin Mining—are all directed by Chinese national Lin Hao.<sup>87</sup>

In September 2021, just before the creation of KGOR, six Chinese enterprises, which included Orientale Ressources Congo, reportedly were barred from operating within the DRC by President Félix Tshisekedi because of alleged failure to register activities with the local authorities.<sup>88</sup> While it is unknown if the situation in the OWR influenced these suspensions, the Chinese Embassy in the DRC publicly supported the move.<sup>89</sup> The subsequent formation of KGOR, however, appears to have allowed the continued operation of actors reportedly involved in illegal mining, including Kimia Mining Limited and Orientale Ressources Congo. Satellite imagery shows that mining operations continued along the Ituri River within the reserve.



*Ituri River within Okapi Wildlife Reserve boundaries, May 2019**Ituri River within Okapi Wildlife Reserve boundaries, January 2023*

Evident in the satellite imagery of the companies mining along the Ituri River is the significant environmental impact on the local forest. Mining for gold, the primary mineral sought in the Ituri River, is a potentially highly damaging process when unregulated. Cyanide, which is frequently used in gold mining<sup>90</sup> and can be seen in the images, is also extremely toxic to wildlife<sup>91</sup> and is used by poachers to poison the water holes elephants use.<sup>92 93</sup> Artisanal gold mining has also negatively impacted the local vegetation cover and soil profile as well as reduced water quality and increased sedimentation in rivers.<sup>94</sup>

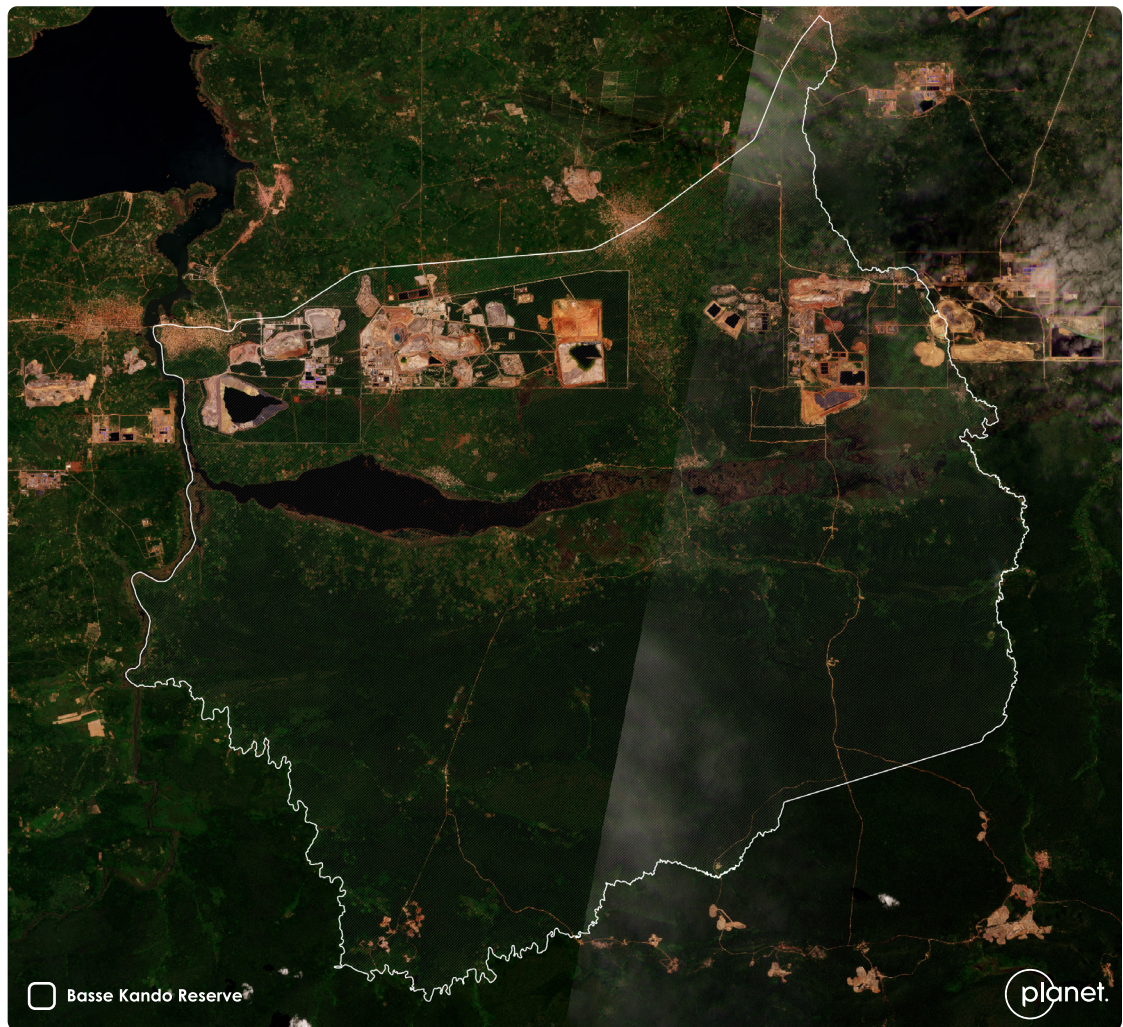
Since at least summer 2022, unregistered Chinese mining has also affected communities in the Kibali River Basin adjacent to Garamba National Park.<sup>95 96 97</sup> Although there were no officially registered mining concessions at this location, the image below shows the extent of a Chinese mining operation in August 2022. A concession attributed by Congolese government records to Giro Goldfields, an Australian mining project with partial Chinese ownership,<sup>98</sup> was the nearest legally-operating concession.<sup>99</sup> Chinese companies are also reported to take advantage of local artisanal mining cooperatives and use them as a front to extract minerals,<sup>100</sup> although it is unknown to what extent this is happening along the Kibali River.

*Illicit Chinese Mine along the Kibali River, August 2022*



Additionally, Basse Kando, a hunting reserve in southern DRC, has been effectively forgotten despite its legal status<sup>101</sup> and carved up by foreign-owned mining concessions—including the Chinese state-owned CMOC Group—seeking copper and cobalt.<sup>102</sup> Pollution from this encroachment has also had a significant effect on the biodiversity of local waterways, as fauna has gradually disappeared. Rivers near mining concessions were also found to be highly contaminated by copper and cobalt, the latter produced as a side effect of copper mining, significantly impairing ecological conditions in those habitats.<sup>103</sup>



*The Extent of Mining Development in Basse Kando Reserve, February 2024*

## The Facilitation of Natural Resource Trafficking

The establishment of mining concessions adjacent to protected areas also requires the development of infrastructure, such as roads, to enable passage by mining operators. However, other actors, which may include poachers of high-value wildlife<sup>104</sup> and traditional bushmeat hunters, also leverage this expanded access into biodiverse areas.<sup>105 106</sup> This infrastructure also allows for additional exploitation and trafficking in wildlife and natural resource products by foreign workers, corrupt local military and government officials, and nonstate armed actors.

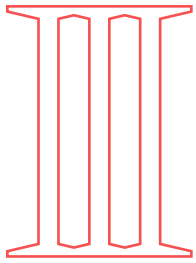
Since the early 2000s, Chinese nationals have been reported as the main foreign buyers of ivory and wildlife products in Central Africa,<sup>107</sup> sourcing products from timber and mining project sites far from major cities.<sup>108</sup> Additional reporting, however, exists on the association between Chinese nationals and other instances of natural resource trafficking. In a June 2021 case of illicit mining in the Okapi Wildlife Reserve, Congolese authorities seized 31 kilograms of gold intended for smuggling abroad.<sup>109</sup> While three Congolese nationals were arrested in the incident, two other



Chinese nationals reportedly fled the scene.<sup>110</sup> According to Congolese authorities, the gold came from the Muchacha mine, operated by MCC Resources.<sup>111</sup> Congolese government records indicate that MCC Resources was previously owned by Chinese national Cong Maohuai,<sup>112</sup> but the company was reportedly acquired by Kimia Mining Investment in March 2021.<sup>113</sup> A Congolese Institute for the Conservation of Nature (ICCN) expert testified in court in July 2021 that Chinese nationals frequently cross into the Muchacha mine in the Okapi Wildlife Reserve to illegally exploit gold.<sup>114</sup>

Armed actors have also been associated with trafficking in wildlife and natural resources from protected areas. The presence of Armed Forces of Democratic Republic of the Congo (FARDC) soldiers illegally providing security to foreign-owned mines in protected areas may contribute to this illicit trafficking and serve the dual purpose of facilitating the smuggling of natural resources. FARDC soldiers have been implicated in natural resource trafficking from protected areas by using their influence to move minerals across borders and evade customs.<sup>115</sup> Wildlife traffickers have also been caught on multiple occasions reselling consolidated ivory reportedly poached by armed groups operating in the Virunga National Park area.<sup>116</sup>

A thorough examination of the combination of threats from mining's direct environmental effects, encroachment, and natural resource trafficking and exploitation is ultimately necessary to understand the multimodal consequences of mining on biodiversity, which is often an afterthought in existing processes for granting mining concessions. Protected areas are intended as bulwarks against these threats but can prove fragile if their integrity is threatened by any of these downstream effects of mining activity. Protecting against direct illicit and environmental threats of mining is even more critical in situations of socioeconomic instability, as explained in the following section.

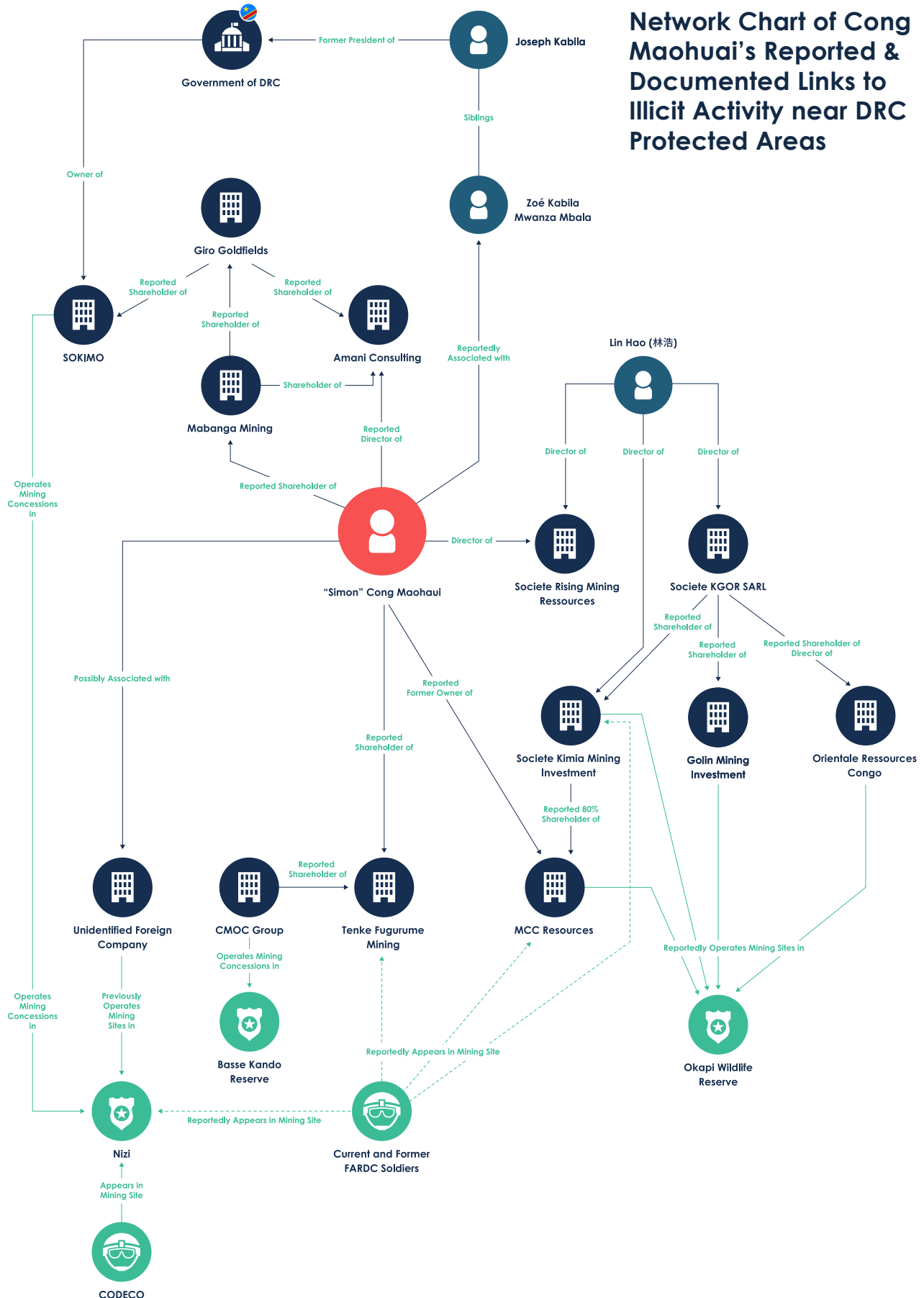


## The Destabilization of Local Communities via a Cycle of Corruption, Securitization, Conflict, and Displacement

When coupled with rampant corruption, an increase in formalized, large-scale mining operations near protected areas often leads to the forming of relationships between private mining operators and political, military, and other armed actors near the mining areas.<sup>117</sup> This creates a cycle of instability that affects the socioeconomic livelihood of local communities. Chinese mining companies have a history of leveraging corruption in the DRC,<sup>118 119</sup> which is valuable in escaping enforcement of local regulations. Local leaders, barred by law from entering the mining business,<sup>120</sup> are reportedly “outsourcing” mining to Chinese enterprises,<sup>121</sup> creating political alliances and fueling corruption. Exacerbating this is the fact that most DRC officials are not paid an official salary, leading to them enacting illegal taxation and increasing involvement in lucrative industries to, in essence, pay their own salaries.<sup>122</sup> Chinese enterprises reportedly assist them in this activity through backdoor dealings.<sup>123</sup>

One key case of a Chinese national who reportedly made a name for himself exploiting political relationships in the DRC is Cong Maohuai.<sup>124</sup> Also known by his English name, “Simon Cong,”<sup>125</sup> Cong is widely considered one of the most influential Chinese investors operating in the DRC across multiple sectors, including mining.<sup>126</sup> Cong’s reputed history of corruption in the infrastructure development sphere is extensively reported,<sup>127 128</sup> and he is reportedly close with former Congolese President Joseph Kabila’s brother, Zoé Kabila Mwanza Mbala.<sup>129</sup> At least three mining companies with apparent links to Cong are operating within 10 km of protected areas.<sup>130 131</sup> Mining companies directed by Cong have also allegedly operated within protected area boundaries<sup>132</sup> and illegally employed FARDC soldiers to protect concessions from artisanal miners and other armed actors.<sup>133</sup> Illicit activity reportedly associated with Cong provides a useful illustration of other destabilizing activity associated with Chinese mining concessions in the DRC.

## Network Chart of Cong Maohuai's Reported & Documented Links to Illicit Activity near DRC Protected Areas





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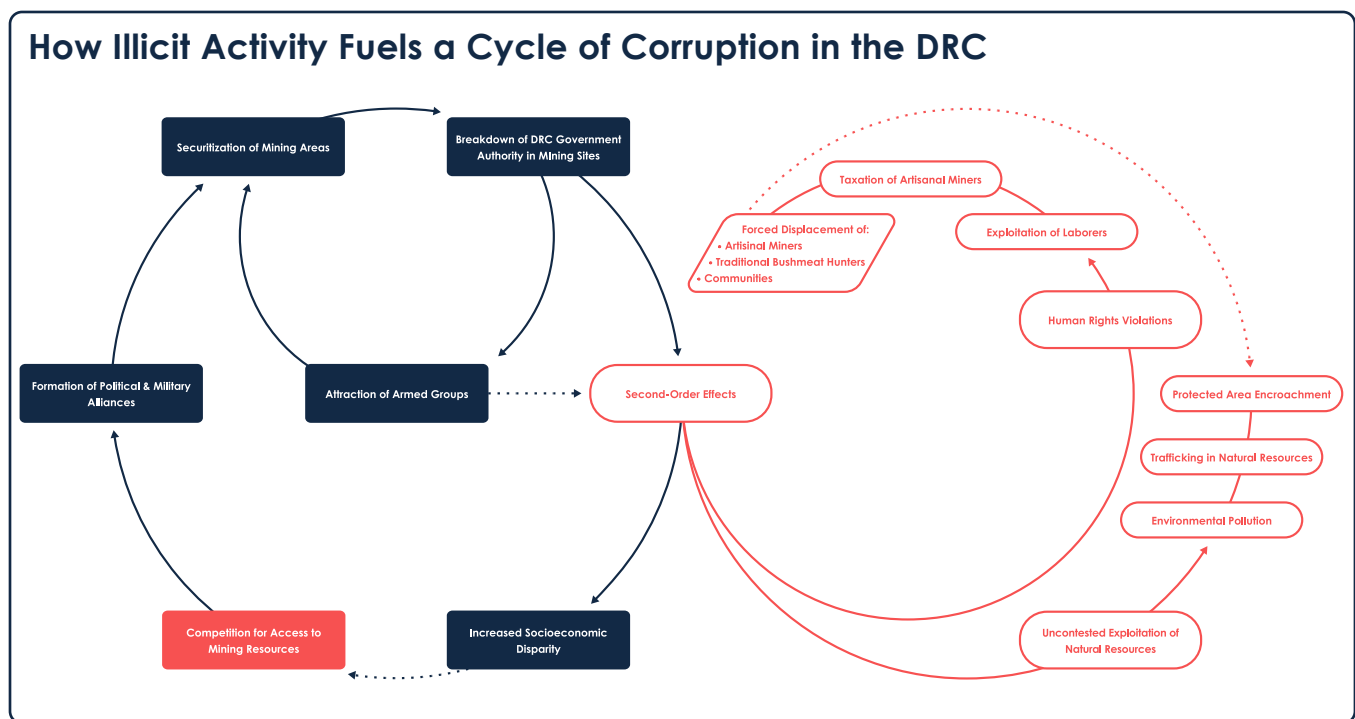
## Securitization

Competition between companies and political actors, as well as perceived threats posed by illegal artisanal miners and nonstate armed groups, has led to Chinese-owned mining operations hiring local FARDC and police units as private security.<sup>134 135</sup> These mining companies appear to seek out additional protection due to the security risk presented by other armed actors in the region, but hiring a third-party security force is illegal under DRC mining law.<sup>136</sup> Under DRC law, all security and peacekeeping should be the sole responsibility of the mining police, a department of the DRC National Police.<sup>137</sup> However, a recent study by the U.S. Agency for International Development found that state agents do not exercise authority in semi-industrial mining operations due to the heavy militarization.<sup>138</sup> Kimia Mining Investment, one of the Chinese mining companies allegedly operating illegally inside the Okapi Wildlife Reserve,<sup>139</sup> has reportedly used FARDC soldiers as security forces since 2016.<sup>140</sup> A Chinese state-owned enterprise, CMOG Group, was also reported to have hired unidentified private security at the Tenke Fungurume copper and cobalt mine in the southern DRC, which was strongly implied to be FARDC-affiliated.<sup>141</sup> “Simon” Cong Maohuai is a reported shareholder in the Tenke Fungurume mining project.<sup>142</sup> Sometimes, as was reportedly the case at a mine in Haut-Uele Province, hired security forces have allegedly prevented state officials from accessing the area to monitor the Chinese company operating there.<sup>143</sup>

A 2022 UN Panel of Experts report also found that FARDC soldiers were present protecting the interest of “foreign actors” working with Cooperative Minière de l’Ituri au Congo at the Luba mining site near Nizi, DRC.<sup>144</sup> The cooperative had reportedly previously entered into an agreement with a Chinese company in 2020, although that company had allegedly left due to violence by the CODECO armed group.<sup>145</sup> As of 2020, there were only two companies with officially-allotted mining concessions in Nizi—the Congolese-owned Mongbwalu Gold Mines and Société Minière de Kilo Moto (SOKIMO), the latter of which is a joint shareholder in the Giro Goldfields with “Simon” Cong Maohuai’s companies’ Mabanga Mining and Amani Consulting.<sup>146</sup> Giro Goldfields holds the closest active mining concession to illegal mining documented along the Kibali River in August 2022.<sup>147 148</sup> Cong has a well-documented history of leveraging FARDC soldiers as private security,<sup>149</sup> and both SOKIMO and Mabanga hold mining concessions within 10 km of protected areas.

Evidence also suggests that mining for gold, in particular, exacerbates the negative effects of mining on protected areas and the communities that depend on them. In June 2023, the U.S. Department of State published an advisory noting the growing role of gold mining in fueling conflict and instability.<sup>150</sup> As detailed in this brief, most of the illicit activity and instability is related to the mining for gold, as opposed to copper or cobalt, the other two top minerals sought in Chinese-owned mining concessions near protected areas. That Chinese-owned mining concessions also sought gold in concessions where cobalt and copper appeared to be the primarily sought minerals is, thus, a unique problem. While gold is a notorious conflict mineral,<sup>151 152</sup> cobalt is not associated with increased conflict.<sup>153</sup> Therefore, Chinese-owned mining concessions, particularly those that seek gold, tend to opt for increased militarization, which attracts the attention of armed groups.<sup>154 155</sup>

Significant mineral resources, especially gold, attract armed groups across diverse regions of Sub-Saharan Africa, including the Sahel,<sup>156</sup> South Sudan,<sup>157</sup> and the Congo Basin.<sup>158</sup> A 2017 study suggested that deforestation in the DRC was linked closely with conflict, likely due to conflict's association with extractive activities like mining and logging.<sup>159</sup> Direct attacks on mining operations by nonstate armed groups are also common. The armed groups are attracted to the region because of the potential for mineral resources, specifically gold, to fund their operations.<sup>160</sup> In Ituri province, members of the CODECO and Zaïre armed groups are reported to tax and directly control mining sites,<sup>161</sup> preventing access by Congolese authorities and further facilitating illicit trafficking in gold out of the DRC.<sup>162</sup> A Chinese company, Kun Hou Mining, also reportedly provided weapons and financing as gifts to local armed groups,<sup>163</sup> possibly as a bribe to prevent attacks from them.



This increase in securitization serves to enforce inequalities in socioeconomic power, causing distress to local communities and residents and transforming the mining of these minerals into a series of potential human rights violations. The presence of armed actors at mining sites often leads to rampant illegal taxation by hired security on other local artisanal miners in proximity to their charged concessions<sup>164</sup> and physical abuse against local miners.<sup>165</sup> FARDC forces protecting Kimia Mining Limited, for example, were found by a UN Panel of Experts to have harassed and evicted thousands of illegal miners.<sup>166</sup> This destabilization cycle quickly spreads to local communities and, downstream, begins to further affect local protected areas by virtue of economic necessity.

## Socioeconomic Effects on Local Communities

The socioeconomic power inequality generated by this cycle of political competition and conflict frequently leads to human rights violations in the name of protecting economic interests. The establishment of mining concessions has led to forced evictions of local communities<sup>167</sup> and unsafe labor conditions for employed miners,<sup>168</sup> many of whom are underage.<sup>169</sup>

The displacement of local communities and local miners by the foreign-owned mining companies feeds a vicious cycle in which artisanal miners, many of whom rely on mining for their livelihoods,<sup>170</sup> are forced to illicitly mine within protected area boundaries.<sup>171</sup> Artisanal miners have also been shown more likely to engage in illegal bushmeat hunting in protected areas.<sup>172</sup> Additionally, mining concessions operating within traditional hunting grounds displace local bushmeat hunters, effectively forcing them to encroach on more sensitive areas like national parks.<sup>173</sup> In Basse Kando Reserve, traditional hunters, who relied on the reserve as a hunting concession, have been forced into nearby Upemba and Kundelungu National Parks in recent years.<sup>174</sup> The Basse Kando example also illustrates the importance of including all categories of protected areas in this analysis,<sup>175</sup> not just national parks, as encroachment on or prevention of access to special-use protected areas often leads to additional exploitation.

The pollution effects of mining can also take a toll on local communities, particularly as residents are exposed to metal contamination and poisoning. Residents living near cobalt and copper mines in the DRC were found to have high cobalt and uranium exposure, leading to oxidative DNA damage.<sup>176</sup> Cobalt exposure can also have a cancerous effect on humans.<sup>177</sup> In addition, gold mining—which uses mercury in the mining process—can lead to mercury contamination in local communities, and is linked to such health effects as kidney dysfunction, neurological conditions, and autoimmune disorders.<sup>178</sup> Gold mining, although targeting a non-radioactive metal, was also associated with increased radiation exposure for workers and local communities.<sup>179</sup> This contamination, and the lack of intervention by authorities, can lead to a distrust of government and regulatory bodies among local communities.<sup>180</sup>

The downstream socioeconomic effects generated by a cycle of corruption, political alliances, and securitization that Chinese entities in the DRC have leveraged are an additional threat to the integrity of nearby protected areas. Human rights violations like physical abuse, forced displacement, and unregulated contamination of the environment take a significant toll on local communities, creating a downward spiral that can result in further exploitation of the DRC's sensitive ecosystems.

# N Conclusion

Allowing foreign-led extractive industry, along with the potential negative side effects it brings, is an economic calculation that requires specific attention. However, it appears that DRC regulators have failed or lacked the incentive to review the potential environmental fallout of unregulated mining and to enforce protected area boundaries. The continued engagement of foreign mining companies in areas adjacent to protected areas is generating additional instability and exacerbating the threats to both wildlife and local communities. While the area within the legally designated boundaries of a protected area is the most immediate concern, this report illustrates that the impacts of extractive industry on biodiversity are real and are also increasing in adjacent areas. This can fracture the connectivity between reserves and lead to encroachment and harmful environmental effects, as well as contribute to corruption, political risk, and human rights violations in local communities.

Studies have evaluated Congo Basin forests—including those inside and outside of protected areas—at a starting value of US\$13 billion per year.<sup>181</sup> Since only a limited amount of mining revenue benefits the DRC government<sup>182</sup> or local communities,<sup>183</sup> effort may be better spent in protecting this natural valuation for the benefit of the Congolese people and their government. The increase in global demand for consumer products reliant on critical minerals found in the DRC, especially copper and cobalt, is threatening landscapes and species.

Finally, while China has oriented its domestic policy toward and issued overseas guidelines on a more sustainable extractive industry, no visible action has been taken to improve the accountability of Chinese mining enterprises in the DRC. Chinese-owned mining concessions in the DRC are increasing rapidly within 10 km of protected areas, and a history of reported illicit and environmentally harmful activity from some Chinese-owned mining concessions suggests this increase may pose a risk to these ecosystems. However, Chinese enterprises are not the only foreign-owned enterprises with a history of illicit activity in the DRC's mining sector. It is a fallacy to assume that Western-owned firms are making—or would make—more biodiversity-conscious decisions or purposely establish concessions far from protected areas. All foreign-owned companies should be held accountable for the types of activity highlighted here, regardless of nationality.



In light of this, the Chinese and DRC governments are uniquely positioned to champion sustainable development in the mining sector through improved regulation and oversight, consistent with the UN Sustainable Development Goals.<sup>184</sup> The Kunming-Montreal Global Biodiversity Framework, adopted in December 2022 at the 15th Conference of the Parties of the Convention on Biological Diversity, also describes a target to protect 30% of inland terrestrial ecosystems by 2030.<sup>185</sup> The DRC currently protects around 11% of its terrestrial land,<sup>186</sup> making conservation of critical ecosystem corridors and prevention of overexploitation critical.

## Final Recommendations

- ➔ **The DRC Ministry of Mines should be prepared to enact more stringent regulations on mining occurring close to protected areas by foreign companies to better protect the vital biodiversity they contain and limit the spillover of illicit activity into surrounding communities.** Unregulated mining in proximity to protected areas can lead to undesirable negative effects on the ecosystems and biodiversity within the protected area. Additionally, wildlife is potentially unable to disperse between protected areas and intact forest patches due to mining conducted there. The DRC Ministry of Mines should be accountable and enforce the existing framework for environmental and social responsibility in the mining code.<sup>187</sup> Additionally, protected area boundaries in the DRC—as in any jurisdiction—should be made clear in a common, easily accessible database for regulators and prospective mining concession grantees to avoid oversight by mining authorities in granting concessions within historic reserve boundaries.
- ➔ **The Chinese government should conduct better evaluations of Chinese-led extractive industries abroad and seek to hold its companies and nationals to a higher standard, regardless of the laxity of local regulations in host jurisdictions.** The 2022 release of the Chinese government’s official overseas investment guidelines is a positive step toward improving environmental conduct in overseas jurisdictions, and China has already shown its willingness to support local enforcement when called out publicly.<sup>188</sup> However, as local laws and regulations are often inadequately enforced or circumvented via corruption, China should take more tangible action to support the enforcement of these guidelines in the DRC. As an example, the U.S. Department of State issued an advisory in June 2023 warning U.S. companies of the risks of creating illicit revenue streams by sourcing gold from Africa and suggesting enhanced due diligence in the sector.<sup>189</sup> China could likewise issue an advisory to Chinese firms of the increased environmental and social risks to doing business in the mining sector of the DRC. There even exists a direct governing body in the DRC through which to enact this oversight, the “Union of Mining Companies with Chinese Capital.”<sup>190</sup> China may also consider enacting regulation(s) similar to the U.S. Foreign Corrupt Practices Act, which allows the U.S. government to prosecute U.S. companies that engage in corrupt practices globally.<sup>191</sup>

➔ **Private companies using minerals extracted from DRC supply chains should perform stronger due diligence to prevent the use of minerals derived from environmentally at-risk locations in manufacturing.** Consumers and global brands are uniquely positioned to change the economic incentive of participating in this supply chain. Continued growth and export of Chinese-produced electronics products, including electric vehicles, mobile phones, and lithium-ion batteries, account for significantly more than half of the global market in each respective category.<sup>192 193 194</sup> End consumers and global brands leveraging certain Chinese supply chains may be exposing themselves to minerals whose extraction has led directly to adverse effects on protected ecosystems, endangered wildlife, and local communities. Industry stakeholders can leverage publicly available information to ensure their supply chains are not entangled with the illicit activity outlined in this brief.

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