

THE ENVIRONMENTAL IMPLICATIONS OF CHINA-AFRICA RESOURCE-FINANCED INFRASTRUCTURE AGREEMENTS: LESSONS LEARNED FROM GHANA’S SINOHYDRO AGREEMENT

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EXECUTIVE SUMMARY

Over the past two decades, African governments have increasingly entered into resource-financed infrastructure (RFI) agreements with Chinese governmental and commercial entities to meet their critical infrastructure needs. Under these agreements, a Chinese entity provides an African government infrastructure loans in exchange for the African government’s pledge to repay the loans with future revenues from natural resource projects. Due to the link between loan repayment obligations and the exploitation of natural resources, environmental and social risks are inherent in this model of finance, and, without due care, RFI agreements can counter rather than promote sustainable development.

To contribute to the understanding of the environmental and social implications of China-Africa resource-financed infrastructure agreements, this case study assesses the environmental and social risks of the aluminum industry projects linked to the Sinohydro Agreement concluded in 2018 between the Government of Ghana (“Ghana” or “Government”) and the Sinohydro Corporation, a Chinese state-owned enterprise specializing in infrastructure development. In addition, this case study analyzes what role, if any, Ghana’s environmental assessment laws have played in avoiding, managing, or mitigating those risks.

By entering into the Sinohydro Agreement, Ghana connected infrastructure financing to a pre-existing government plan to develop an integrated aluminum

industry. The agreement stipulates that Sinohydro is responsible for securing the financing for approximately US\$2 billion worth of Ghanaian infrastructure projects. In exchange, Ghana pledged to use income generated from the sale of bauxite (the primary ore used to make aluminum), refined bauxite, and aluminum to repay the loans. To collateralize the loans, Ghana also agreed to establish an offshore escrow account that is to be Ghana's sole account for receiving revenues generated from the sale of refined bauxite.

To date, US\$646 million of the loan funds have been approved for disbursement, and, in 2019, infrastructure contractors began drawing on the funds to construct high priority road projects. The loans have been made legally binding on the Government through the Ghanaian parliament and president's ratification of deferred payment agreements. The loans have fixed repayment schedules that provide a fifteen-year repayment period and a three-year grace period. If Ghana fails to comply with its collateral or repayment obligations, Sinohydro is entitled to prepayment of outstanding loan balances and may seize the full balance of the escrow account.

Although infrastructure projects are moving forward, Ghana's domestic aluminum industry does not generate sufficient revenues to satisfy its loan repayment and collateral obligations. To overcome this hurdle, Ghana has created a state-owned enterprise known as the Ghana Integrated Aluminum Development Corporation (GIADEC) and given it a mandate to implement a plan to develop aluminum industry projects and related infrastructure (the "Integrated Aluminum Industry Plan"). GIADEC plans to establish up to three new bauxite mines, three new alumina refineries, and one new aluminum smelter, and will hold a minimum 30 percent interest in new aluminum industry projects alongside private investors.

NGOs and members of the public have raised concerns over planned Integrated Aluminum Industry Plan projects because the projects pose significant environmental and social risks. Aluminum industry projects often cause deforestation and loss of biodiversity, impair water and air quality, and harm human health. This study finds that, although Ghana has one of the most comprehensive legal frameworks for environmental assessment in Africa, Ghana's laws have certain weaknesses that undermine their ability to safeguard against high-risk projects and projects deemed unacceptable by impacted communities. Internationally accepted best practices dictate that the Government of Ghana should have performed a strategic environmental assessment at the conceptual stages of the Integrated Aluminum Industry Plan and before the Government pledged to rely on revenues from its domestic aluminum industry to satisfy its infrastructure loan obligations, but Ghana has not performed one. This can be partly attributed to ambiguous provisions of Ghana's environmental assessment laws that do not clearly state whether strategic environmental impact assessment is required for government sectoral plans and that fail to establish procedures for performing strategic environmental assessment.

Ghana's environmental assessment laws expressly require developers of bauxite mines, alumina refineries, and aluminum smelters to conduct environmental impact assessments and obtain environmental permits from the Ghanaian Environmental Protection Agency (EPA) before commencing work on their projects. Nonetheless, EPA is likely to issue environmental permits for all planned projects because Ghanaian law provides EPA a high level of discretion in issuing environmental permits and EPA decision-making processes are influenced by presidential priorities and politics. In this case, the President and GIADEC support implementing the Integrated Aluminum Industry Plan and siting bauxite mines in and around environmentally sensitive forest reserves and vulnerable peasant-farmer communities. They have not prioritized

risk avoidance. Additionally, due to the potential legal and fiscal implications of defaulting on the Sinohydro Agreement infrastructure loans, the President appears in favor of quickly developing the aluminum industry projects, which undermines the ability to properly perform environmental assessments and implement risk avoidance measures. This is all unfolding despite President Nana Akufo-Addo and GIADEC's purported commitments to implementing the Integrated Aluminum Industry Plan in a manner consistent with international standards and sustainability principles.

Ghana's experience with the Sinohydro Agreement demonstrates that RFI agreements may cement and bolster natural resource production as a national policy priority, and thereby increase government prioritization of fiscal and economic factors to the detriment of national environmental protection and sustainability objectives. Given this study's findings and field observations in Ghana, this paper sets forth specific recommendations for Ghanaian policy makers, prospective GIADEC joint venture partners, Sinohydro, and the Sinohydro Agreement infrastructure loan lenders.

Recommendations for Ghanaian Policy Makers

- Although renegotiating RFI agreements are difficult, the economic downturn caused by the COVID-19 pandemic could make Sinohydro and lenders more amenable to renegotiating or amending the Sinohydro Agreement loan terms and deferred payment agreements. Renegotiation could allow Ghana to lengthen loan grace periods and loan repayment periods to provide GIADEC more time to develop Ghana's domestic aluminum industry sustainably. Ghana could also attempt to negotiate a more flexible payment schedule dependent on aluminum industry revenue levels.
- The Ghanaian Parliament should not approve additional deferred payment agreements or engineering, procurement and construction (EPC) contracts until (a) the Government systematically examines the environmental and social risks of developing an integrated aluminum industry and linking such developments to infrastructure loans; and (b) EPA, in collaboration with GIADEC, holds public hearings in communities likely to be impacted by proposed Integrated Aluminum Industry Plan projects. Hearings should be accessible to all members of the public and NGO representatives and provide details on the likely environmental and social implications of the Integrated Aluminum Industry Plan. Halting the approval of the deferred payment agreements and EPC contracts in accordance with this recommendation would ensure that Ghana does not draw upon the full Sinohydro Agreement loan award before it has developed a clear understanding of the risks associated with its repayment strategy.
- The Minerals Commission should refrain from issuing licenses for proposed bauxite mines in the Atewa Forest Reserve at least until GIADEC and the Government have had an opportunity to reassess the merits of siting mines in the Atewa Forest based on an evaluation of scientific evidence and input from local communities.
- Parliament should revise the legislation that created GIADEC to require that GIADEC strive to comply with the Aluminum Stewardship Initiative Performance Standards, which are the premier voluntary industry standards for addressing sustainability issues in the aluminum value chain, and to regularly report to Parliament on efforts it is taking to that end. GIADEC should also be required to publicly disclose such information on its website.

- To provide EPA greater independence from political influence, Parliament should reform the EPA Governing Board membership and more clearly define the grounds upon which the President is authorized to terminate Governing Board directors. EPA autonomy would likely increase if a portion of the Governing Board seats were filled by representatives from civil society and minority/opposition political parties.
- Parliament should revise the legislation that created GIADEC to provide EPA representation on GIADEC's board.
- Parliament should enact new environmental assessment legislation or EPA should promulgate new regulations that explicitly require government ministries, agencies, and state-owned enterprises to undertake strategic environmental assessments when formulating industry or sectoral policies, plans, and programs. Ghana could leverage the expertise and resources of international institutions, such as the African Development Bank, to support the reform of its environmental assessment laws.
- In preparation for the signing of future RFI agreements, Parliament should enact legislation that requires the Government to consider and publicly disclose the potential impacts of a proposed RFI agreement on domestic natural resource exploitation and national environmental and social policy/objectives before any of the loan funds linked to the agreement are disbursed to cover the costs of infrastructure projects.

Recommendations for Sinohydro and the Sinohydro Agreement Lenders

- In order to ensure there is a “social license” to operate and to minimize the risk of social unrest or public dissent jeopardizing the repayment of the infrastructure loans, lenders should not approve the disbursement of the remaining tranche of loan funds until Ghana demonstrates that it has studied the potential environmental and social impacts of the Integrated Aluminum Industry Plan and outlined a plan to address the potential impacts, particularly those of highest concern to the public.
- To avoid reputational risks, Sinohydro or the infrastructure loan lenders should pressure Ghana to undertake an SEA of the Integrated Aluminum Industry Plan and offer to financially assist EPA in carrying out an SEA.

Recommendations for GIADEC Joint Venture Partners

- To avoid reputational risks and to uphold their duty to respect human rights, investors selected to form joint venture partnerships with GIADEC to develop the Integrated Aluminum Industry Plan projects should strive to adhere to international standards, such as the Aluminum Stewardship Initiative Performance Standards, the International Aluminum Institute Sustainable Bauxite Mining Guidelines, and the United Nations Guidelines on Business and Human Rights.
- To promote their position as internationally competitive corporations adhering to Environmental, Social, and Corporate Governance standards, GIADEC joint venture partners should publicize their sustainability or human rights due diligence policies. This would also facilitate transparency and accountability.

The Atewa Range foothills



Credit: Ahtziri Gonzalez/CIFOR.

INTRODUCTION

Across Africa, shortages of physical infrastructure continue to constrain economic development.¹ Between US\$130 billion and US\$170 billion in investment is needed per year to meet the continent's infrastructure needs.² However, financial commitments for infrastructure development are consistently inadequate, leaving annual financing gaps between US\$68 billion and US\$108 billion³—and this gap is likely to increase due the global economic downturn caused by the COVID-19 pandemic.⁴

To address infrastructure shortages, many African governments have increased their infrastructure expenditures by leveraging various financing arrangements with foreign and domestic lenders.⁵ Resource-financed infrastructure (RFI) agreements are one of the prominent means through which African governments access debt capital. These agreements consist of the award of infrastructure loans in exchange for a government's commitment to repay the loans with future revenues from domestic natural resource projects.⁶ Since 2004, African governments have concluded at least 30 resource-backed loan deals cumulatively valued at US\$66 billion.⁷ Chinese policy banks and state-owned enterprises provided most of the loans granted under these deals.⁸

One of the most recently concluded China-Africa RFI agreements is Ghana's Sinohydro Agreement. The parties to the agreement are the Sinohydro Corporation, a Chinese state-owned enterprise specializing in infrastructure development, and the Government of Ghana (the "Government" or "Ghana").⁹ The Sinohydro Agreement's terms specify that Sinohydro is responsible for securing the financing for approximately US\$2 billion worth of Ghanaian infrastructure projects.¹⁰ In exchange, Ghana pledged to use income generated from the sale

1. OECD Development Centre, 2019 Policy Note on Africa: Infrastructure and Regional Connectivity (2019), https://www.oecd.org/dev/development-philanthropy/AfricaPolicyNote%20_2019.pdf.

2. Africa Development Bank, African Economic Outlook 2019, p. 18 (2019); Africa Development Bank, African Economic Outlook 2018, pp. 1, 64–75 (2018).

3. See *supra* note 2; Emmanuel Amoah-Darkwah, The Impact of the COVID-19 Pandemic on Infrastructure Development in Africa, The China-Africa Project (Jul. 2, 2020), <https://chinaafricaproject.com/analysis/the-impact-of-the-covid-19-pandemic-on-infrastructure-development-in-africa/>.

4. Amoah-Darkwah, *supra* note 3.

5. See African Economic Outlook 2019, *supra* note 2, pp. 18–19; African Economic Outlook 2018, *supra* note 2, pp. 84–85.

6. See Ana C. Alves, "China's 'win-win' cooperation: Unpacking the impact of infrastructure-for-resources deals in Africa," 20.2, *S. African J. Int'l Affairs*, pp. 207, 213 (2013); Uzor Ezechukwu, Centre for the Study of the Economies of Africa, "The Chinese Model of Infrastructure Development" (Policy Brief, Jan. 2015).

7. Natural Resource Governance Institute ("NRGI"), Resource-Backed Loans: Pitfalls and Potential, pp. 2, 5–6 (2020); see also Ezechukwu, *supra* note 6, p. 4.

8. Resource-Backed Loans: Pitfalls and Potential, *supra* note 7, pp. 2, 5–6; see also Ezechukwu, *supra* note 6, p. 4; Tewodaj M. Mengistu, *Emerging Infrastructure Financing Mechanisms in Sub-Saharan Africa*, RAND Pardee Graduate School, p. 19 (Dissertation 2013), https://www.rand.org/content/dam/rand/pubs/rgs_dissertations/RGSD300/RGSD316/RAND_RGSD316.pdf.

9. Minister for Finance, Mid-Year Fiscal Policy Review of the 2018 Budget Statement and Economic Policy, pp. 40, 51 (presented to Parliament July 19, 2018).

10. IMF, Ghana: Seventh and Eighth Reviews Under the Extended Credit Facility Arrangement and Request for Waivers of Nonobservance of Performance Criteria-Press Release; Staff Report; and Statement by the Executive Director for Ghana, p. 20 (Apr. 5, 2019), <https://www.imf.org/en/Publications/CR/Issues/2019/04/05/Ghana-Seventh-and-Eighth-Reviews-Under-the-Extended-Credit-Facility-Arrangement-and-Request-46737>.

of bauxite ore,¹¹ refined bauxite, and aluminum to repay the loans.¹² To collateralize the loans, Ghana also agreed to establish an offshore escrow account that is to be funded by income from the sale of refined bauxite.¹³ Because Ghana's domestic aluminum industry did not produce sufficient revenues to satisfy the country's loan repayment and collateral obligations when the agreement was negotiated,¹⁴ Ghana planned to develop various projects such as bauxite mines and alumina refineries to boost its aluminum industry's output and revenues.¹⁵

The benefits of the Sinohydro Agreement and related aluminum industry developments to Ghana are being characterized in markedly contrasting manners: Recently re-elected President of Ghana Nana Akufo-Addo has touted the Sinohydro Agreement as a "win-win" deal, emphasizing that aluminum industry projects will create job opportunities and fuel economic growth.¹⁶ By comparison, many members of the public and nongovernmental organizations (NGOs) predict that the projects will have long-term adverse impacts on the natural environment and human well-being,¹⁷ thus countering rather than promoting sustainable development. For instance, the Government is planning to permit bauxite mining in a biodiversity-rich forest preserve that is the headwaters of rivers that provide drinking water to approximately five million people. NGOs and members of the public are also concerned that the Government is not developing aluminum industry projects transparently or taking sufficient steps to avoid or mitigate environmental harms. This is despite Ghana having some of the strongest government institutions and environmental assessment laws on the African continent.¹⁸

Accordingly, this case study explores the environmental and social implications of Ghana's proposed aluminum industry projects and loan obligations under the Sinohydro Agreement. In addition, this paper analyzes what role, if any, Ghana's environmental assessment laws have played in avoiding, managing, or mitigating environmental and social risks. This study acknowledges that numerous other laws may impact transparency and environmental protection,

11. The Government has asserted that Ghana has the eight largest reserve of bauxite in the world. Minister for Finance, The Budget Statement and Economic Policy of the Government of Ghana for the 2020 Financial Year, p. 138 (presented to Parliament Nov. 13, 2019).

12. IMF, Ghana: Seventh and Eighth Reviews, *supra note 10*, p. 20

13. Deferred Payment Agreement for the Construction/Rehabilitation of Selected Roads and Interchanges in Ghana-Phase 1-Lot 1 (Accra Inner City Roads, Under the Master Project Support Agreement, clause 8 (signed by the Ghanaian Minister of Roads and Highways, 2018), http://ir.parliament.gh/handle/123456789/107/discover?rpp=10&page=1&query=deferred+payment&group_by=None&etal=0; see also IMF, Ghana: Seventh and Eighth Reviews, *supra note 10*, p. 20; Term Sheet Relating to Deferred Payment Agreement between The Republic of Ghana represented by the Ministry of Finance or its Assignee (as the "Debtor") and Sinohydro Corporation Limited (as the "Creditor").

14. IMANI Center for Policy & Education, IMANI ALERT: Government Must Clarify A Whole Lot in the Barter Deal with China. IMANI Recommends How Government Should Proceed (Sept. 11, 2018), <https://imaniafrica.org/2018/09/11/imani-alert-government-must-clarify-a-whole-lot-in-the-bauxite-barter-deal-with-china-imani-recommends-how-government-should-proceed/>.

15. "[T]he extractive sector contributes 17 percent to Ghana's government revenues and accounts for 67 percent of exports." Nafi Chinery, NRGI, Ghana: Updated Assessment of the Impact of the Coronavirus Pandemic on the Extractive Sector and Resource Governance (Dec. 14, 2021), <https://resourcegovernance.org/analysis-tools/publications/ghana-updated-assessment-impact-coronavirus-extractive>.

16. Staff, "Resources accruing from bauxite will benefit all - President," *Business Ghana* (Dec. 3, 2020), <https://www.businessghana.com/site/news/business/228252/Resources-accruing-from-bauxite-will-benefit-all-President>.

17. Shola Lawal, "Is endangering Ghana's most important ecosystem a price worth paying for a multi-billion-dollar loan?," *Equal Times* (Feb. 2019), <https://www.equaltimes.org/is-endangering-ghana-s-most?lang=fr#.X7dBS9BKg2w>; Kwasi Gyamfi Asiedu, "A \$10 billion China deal to mine bauxite in Ghana is facing fierce environmental pushback," *Quartz* (Jun. 5, 2018), <https://qz.com/africa/1296808/a-10-billion-china-deal-to-mine-bauxite-in-ghana-is-facing-fierce-environmental-push-back/>.

18. Netherlands Commission on Environmental Assessment, Strategic Environmental Assessment for Ghana's Oil and Gas Sector (May 2012), <https://api.commissiener.nl/docs/cms/CD%20SEA%20Ghana%20def.pdf>.

such as laws governing access to information (e.g., trade secrets laws, national security laws, and laws governing sensitive government information), foreign investment laws, and land use and spatial planning laws. Nonetheless, environmental assessment laws are vital for conforming natural resource developments with environmental protection and sustainable development objectives.

Research for this study involved an analysis of secondary and primary literature, including official government documents, legislative texts, press statements, presidential speeches, and research reports on resource-backed loans and the environmental impacts of aluminum industry projects. Fieldwork was also conducted in the communities bordering the Atewa Forest Reserve and in Accra, Ghana. While in Ghana, interviews were conducted with officials from the Ghanaian Minerals Commission and Environmental Protection Agency, civil society organization leaders, members of communities likely to be impacted by aluminum industry projects linked to the Sinohydro Agreement, University of Ghana professors who specialize in environmental law and environmental sciences, and parliamentary advisers.¹⁹ Representatives of the United Nations Development Programme and the Aluminum Stewardship Initiative, an international nonprofit organization that provides voluntary standards for addressing sustainability issues in the aluminum value chain, were also interviewed.

Background and Definitions

This section provides background on RFI agreements and the primary types of environmental assessment.

China-Africa Resource-Financed Infrastructure Agreements

An RFI agreement is an agreement whereby a government “link[s] expected [future] revenues from production rights granted to investors for the development of natural resources to ... a loan for [the] construction of unassociated infrastructure today.”²⁰ In other words, under this model, a lender awards a borrower government infrastructure loans in exchange for the borrower government’s pledge to repay the loan with future revenues generated by extractive projects. World Bank research indicates that the typical circumstance in which a government may seek to conclude a RFI agreement is where:

- (i) [the] government cannot obtain sufficient [capital], on a sovereign basis, to build necessary infrastructure; (ii) the necessary infrastructure will not produce sufficient revenues to finance on a project finance basis; and (iii) the government has a natural resource ... [that] could be linked to a credit facility.²¹

Over the past two decades, RFI agreements between African governments and Chinese state-owned enterprises and policy banks have come to prominence. In the wake of the 2007–2008 global financial crisis, resource-rich African governments embraced these agreements due to constraints on more traditional sources of infrastructure project funding, such as tax revenue,

19. Gaining a grasp of the nuances of the Sinohydro Agreement has proven difficult for third-party analysis. Meetings were unable to be scheduled with the Ministry of Finance or the Vice President’s advisers.

20. Halland et al., World Bank, *Resource Financed Infrastructure: A Discussion of a New Form of Infrastructure Financing*, pp. 13, 32, 48, 83 (2014); *see also*, David G. Landry, “The risks and rewards of Resource-for-Infrastructure deals: Lessons from the Congo’s Sicomines Agreement,” John Hopkins SAIS China-Africa Research Initiative (Working Paper No. 16, May 2018).

21. Halland et al., *supra* note 20, p. 38. The Democratic Republic of the Congo pursued a RFI deal with China based on an understanding that it could not secure the infrastructure financing it desired from “Western” donors. Landry, *supra* note 20, p. 9.

government bonds, foreign development aid, private-sector project finance, and ordinary commercial loans.²² In addition, African governments find Chinese RFI agreements attractive because the infrastructure projects constructed pursuant to these deals are completed faster than those financed by European development agencies and international financial institutions (IFIs), such as the World Bank.²³ The World Bank, for example, imposes more stringent conditionalities, performance benchmarks, and monitoring regimes than Chinese policy banks, resulting in lengthier project timetables.²⁴

Furthermore, the rise of the RFI model has coincided with the Chinese government's strategy of leveraging overseas investment to improve its commercial and political ties with African governments (e.g., China's Belt and Road Initiative).²⁵ RFI agreements' promotion of natural resource exploitation also helps Chinese firms access and diversify their supply of strategic commodities, which, in turn, fuels and sustains economic growth in China.²⁶ For example, China is the top global consumer of bauxite—the primary ore used to make alumina and aluminum—and has concluded RFI agreements that promote the production of raw and refined bauxite with the governments of Ghana and Guinea.²⁷ Notably, these agreements were executed when the output of traditional suppliers of bauxite to the Chinese market were declining.²⁸

As for the process for entering into RFI agreements with Chinese entities, representatives from the prospective loan recipient country's office of the head of state (or head of government) and

22. Jeffrey Gutman et al., Brookings Global Economy and Development, *Financing African Infrastructure: Can the World Deliver* (Mar. 2015), https://www.brookings.edu/wp-content/uploads/2016/07/AGIFinancingAfricanInfrastructure_FinalWebv2.pdf; Robert Sheppard et al., Public-Private Infrastructure Advisory Faculty, *Financing Infrastructure in Africa* (Sept. 2006); Halland et al., *supra* note 20, p. 5; Lucy Lamble, "Poorest countries bear the brunt as aid levels fall for second successive year," *The Guardian* (Apr. 10, 2019); For some countries, budget shortfalls have been coupled with an inability to borrow on a sovereign basis due to International Monetary Fund and donor agency covenants.

23. Tewodaj M. Mengistu, *supra* note 8, pp. 32–33; Eric Olander, China's Unrivaled Speed Advantage in Africa, *The China-Africa Project* (Nov. 2, 2019), <https://chinaafricaproject.com/analysis/chinas-unrivaled-speed-advantage-in-africa/>.

24. "Although some Chinese policy banks and commercial enterprises have their own voluntary social and environmental guidelines, they rarely are applied or enforced, and the stated overarching policy for Chinese overseas investment is to defer to the host country regulations and risk assessment on such matters." K. Gallagher et al., Boston University's Global Development Policy Center, *China and the Amazon* (May 2019), <https://www.thedialogue.org/wp-content/uploads/2019/05/China-and-the-Amazon.pdf>; see also Tewodaj M. Mengistu, *supra* note 8, pp. 32–33.

25. See generally David Dollar, Brookings Institution, *Understanding China's Belt and Road Infrastructure Projects in Africa* (Sept. 2019); Eleanor Albert, Council on Foreign Relations, *China in Africa* (Jul. 2017), <https://www.cfr.org/backgrounder/china-africa>; Forum on China-Africa Cooperation, *The Fifth Ministerial Conference of the Form on China-Africa Cooperation Beijing Action Plan* (Sept. 2012).

26. Alves, *supra* note 6, pp. 208–09; L. Durovic, "Resource Curse and China's Infrastructure for Resources Model: Case Study of Angola," *J. China & Int'l Relations*, 4, p. 73 (2016); Tewodaj M. Mengistu, *supra* note 8, p. 26.

27. Matthew C. DuPée, "China Races Into West Africa's Mineral, and the Environmental Costs Rise," *World Politics Review* (Sept. 22, 2017), <https://www.worldpoliticsreview.com/articles/23206/china-races-into-west-africa-s-mineral-rush-and-the-environmental-costs-rise>; Staff, "Guinea's bauxite boom is helping China but failing locals," *The Economist* (Nov. 3, 2018); Jevans Nyabiage, "Ghana goes ahead with \$2 billion Chinese bauxite barter deal that has conservationists up in arms," *South China Morning Post* (Nov. 17, 2019), <https://www.scmp.com/news/china/diplomacy/article/3037993/ghana-goes-ahead-us2-billion-chinese-bauxite-barter-deal-has>; Staff, It's not too late to come clean on US\$2bn Sinohydro deal terms – NRG Report, *GhanaWeb* (Feb. 28, 2020), <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/It-s-not-too-late-to-come-clean-on-US-2bn-Sinohydro-deal-terms-NRGI-Report-880114>.

28. DuPée, *supra* note 27; Elliot Smith, "China's \$2 billion deal with Ghana sparks fears over debt, influence and the environment," *CNBC* (Nov. 21, 2019), <https://www.cnbc.com/2019/11/21/chinas-2-billion-ghana-deal-fears-over-debt-influence-environment.html>; see also Andy Home, "China lobs a grenade into the aluminum supply chain," *Reuters* (Mar. 3, 2017), <https://www.reuters.com/article/us-china-pollution-at-home/china-lobs-a-grenade-into-the-aluminum-supply-chain-andy-home-idUSKBN16A1AN>.

ministry of finance often negotiate RFI agreement terms.²⁹ During negotiations, the parties identify a natural resource on the prospective loan recipient country's territory that can generate substantial future revenues.³⁰ Government revenues from the exploitation of the chosen natural resource (e.g., receipts, taxes, royalties, or dividends in the case of government joint ventures) are typically the sole or primary source of funds available to the loan recipient country for loan repayment purposes.³¹ Due to this, the value and repayment period of RFI loans are influenced by the forecasted value of the chosen natural resource and the forecasted length of time required to develop the resource for production.³² Moreover, some RFI loans have fixed repayment schedules similar to those of a standard loan, while others have variable repayment schedules that are dependent on commodity prices or commodity revenue levels (e.g., repayment speed depends on how much revenues the designated natural resource income stream generates).³³

Agreement negotiations commonly conclude with the contracting parties signing a memorandum of understanding or framework cooperation agreement. These instruments set out general terms, such as the value of the credit facility and a description of the infrastructure projects that the credit facility will fund.³⁴ More detailed subsidiary contracts (e.g., loan agreements and engineering, procurement and construction [EPC] contracts) are later concluded with lenders and contractors. It is not uncommon for RFI agreements to require loan recipient countries to contract with Chinese companies to construct the planned infrastructure projects.³⁵ Additionally, the Export-Import Bank of China and China Development Bank generally provide the infrastructure loans,³⁶ and disburse loan funds directly to infrastructure project contractors rather than to the borrower country.³⁷

In terms of risks, China-Africa RFI agreements can have adverse social and environmental impacts due to loan recipient countries' reliance on income from extractive projects, which often emit greenhouse gases, cause pollution and biodiversity loss, and impact a wide range of human rights, to satisfy their infrastructure loan obligations. Research indicates that Chinese lenders and investors, which are commonly involved in both the resource development and infrastructure aspects of China-Africa RFI agreements, are more willing to engage in and back environmentally risky projects than prominent IFIs and multilateral lenders and investors from high-income North American and European countries.³⁸ For example, Boston University researchers broadly

29. D. Brautigam & K. Gallagher, "Bartering Globalization: China's Commodity-backed Finance in Africa and Latin America," *Global Policy*, 5, pp. 346–47 (Sept. 2014).

30. Halland et al., *supra* note 20, pp. 31–32, 39–41.

31. Halland et al., *supra* note 20, pp. 19, 31; see also Resource-Backed Loans: Pitfalls and Potential, *supra* note 7, pp. 2–3.

32. Generally, the resource projects are developed in accordance with the traditional resource development model whereby investors apply or bid for licenses and permits from government agencies to undertake projects. David G. Landry, *Sicomines Deal Offers Four Clear Resource-for-Infrastructure Lessons*, NRG (Mar. 9, 2017), <https://resourcegovernance.org/blog/sicomines-deal-offers-four-clear-resource-infrastructure-lessons>; Halland et al., *supra* note 20, pp. 4, 15–20.

33. NRG, *Resource-Backed Loans: Pitfalls and Potential*, *supra* note 7, pp. 24–26.

34. Alves, *supra* note 6, pp. 213–14; see, e.g., Landry, *supra* note 20, pp. 9–14.

35. *Supra* note 34.

36. *Resource-Backed Loans: Pitfalls and Potential*, *supra* note 7, pp. 3, 11; OECD & UN, *Economic Diversification in Africa: A Review of Selected Countries*, p. 56 (2011).

37. Halland et al., *supra* note 20, pp. 4, 32; *Sicomines Deal Offers Four Clear Resource-for-Infrastructure Lessons*, *supra* note 32.

38. Zhang Chun, "China needs urgent oversight of investments' social and environmental footprint," *Dialogo Chino* (Dec. 22, 2017), <https://dialogochino.net/en/extractive-industries/10158-china-needs-urgent-oversight-of-investments-social-and-environmental-footprint/>; Alves, *supra* note 6, p. 219 (noting that "the poor environmental and social responsibility record of Chinese companies engaging in natural resources extraction" are raising concerns among traditional donors and civil society); see generally K. Gallagher et al., *supra* note 24.

examined Chinese development finance, and found that out of 615 projects backed by the China Development Bank and the Export-Import Bank of China, 124 are in national protected areas and 261 are within critical habitats.³⁹ In addition, commentators suggest that repayment obligations stemming from infrastructure loans linked to oil production can be a driving force behind the exploitation of natural resources in biodiversity-rich, protected ecosystems; this appears to be particularly true for loan recipient countries faced with decreasing commodity prices or unfavorable loan terms.⁴⁰ RFI agreements are also critiqued for their opacity,⁴¹ which makes public oversight difficult and, in turn, increases the likelihood that projects will adversely impact certain segments of society or certain communities.

Environmental Assessment

Environmental assessment is a formal process aimed at reducing environmental risks and aligning development activities with the interest of the public. Public participation is a fundamental element of the process.⁴² The rationale for requiring environmental assessment under national laws is that a mandatory process can ensure that the potential environmental impacts of proposed activities are systematically evaluated, leading to well-informed government decision making.⁴³ Two of the primary forms of environmental assessment are environmental impact assessment (EIA) and strategic environmental assessment (SEA).

EIA laws require an analysis of the likely impacts that a proposed physical development/project (e.g., a mining project) may have on the environment and human well-being.⁴⁴ Typically, government regulators responsible for sanctioning projects consider EIA findings when deciding whether to issue the permits or licenses that developers require to commence work on proposed projects (e.g., environmental permits and mining licenses).⁴⁵ Thus, EIA laws can empower regulators, such as environmental protection agencies, to decide whether environmentally risky

39. This study was not specific to China-Africa RFI Agreements. Kevin P. Gallagher & Rebecca Ray, “China Takes the Lead in Development Finance, Project Syndicate” (Dec. 9, 2020), <https://www.project-syndicate.org/commentary/china-development-finance-benefits-risks-by-kevin-p-gallagher-and-rebecca-ray-2020-12?barrier=accesspaylog>. While not related to Africa, it is noted that “Chinese finance in the Amazon has tended to flow toward the more socially and environmental risky infrastructure projects in the Amazon—including a number of projects that had been pre-screened as too risky by other international financial institutions.” K. Gallagher et al., *supra* note 24, Executive Summary.

40. “China’s oil-backed lending to Ecuador also requires more in the way of oil output. Ecuador’s obligations to China have been linked, therefore, to [the Ecuadorian government’s] 2013 decision to exploit [oil in a national park protecting a biodiversity-rich portion of the Amazon rain forest, abandoning previous Government conservation plans]. Chinese firms are directly involved in the exploitation of certain blocks [in the forest].” “China’s Role in Ecuador’s Oil Sector,” *The Dialogue* (Jan. 23, 2014) (commentary from Margaret Myers, director of the China and Latin America program at the Inter-American Dialogue), <https://www.thedialogue.org/blogs/2014/01/chinas-role-in-ecuadors-oil-sector/>; Rebecca Ray & Adam Chimienti, *A Line in the Equatorial Forests*, Boston University Global Economic Governance Initiative, pp. 15–16 (Jun. 2015) (discussing how China-Ecuador oil-for-loan agreements made the “steady output of oil ... even more of a top national policy priority than it was previously...”), <https://media.business-humanrights.org/media/documents/files/documents/Ecuador1.pdf>; Nicholas Casey & Clifford Krauss, “It Doesn’t Matter if Ecuador Can Afford This Dam. China Still Gets Paid,” *The New York Times* (Dec. 24, 2018), <https://www.nytimes.com/2018/12/24/world/americas/ecuador-china-dam.html>; Jason Goldman, “Ecuador has begun drilling for oil in the world’s richest rainforest,” *Vox* (Jan. 14, 2017), <https://www.vox.com/energy-and-environment/2017/1/14/14265958/ecuador-drilling-oil-rainforest>.

41. Tewodaj M. Mengistu, *supra* note 8, p. 33 (“Chinese agencies tend to be a lot less transparent in their dealings than the traditional financiers, although the latter group is not homogeneous in the disclosure of its practices.”).

42. UN Environment Programme (“UNEP”), *Assessing Environmental Impacts – A Global Review of Legislation*, pp. 50, 100 (2018).

43. *Assessing Environmental Impacts – A Global Review of Legislation*, *supra* note 42, pp. 2–3, 6.

44. *Assessing Environmental Impacts – A Global Review of Legislation*, *supra* note 42, p. 3.

45. *Supra* note 44.

projects should move forward and “influence how a project should be implemented in order to avoid, minimise, restore, and offset negative environmental impacts.”⁴⁶

Nonetheless, EIA laws are subject to limitations. EIAs “take[] place in a predetermined policy environment,” where “decisions at [the] policy or planning level, that could influence the type and amount of projects that are actually built on the ground, have already been taken.”⁴⁷ Put differently, project proposals often arise from, or are driven by, the implementation of upstream government policies and plans that fall outside of the purview of EIA laws thus limiting the ability of EIAs to shape environmental outcomes. For instance, by reacting to natural resource development proposals, rather than anticipating them, it is often difficult to leverage EIA laws to steer developments away from environmentally sensitive sites. Furthermore, EIAs are typically concerned with one specific project, and thus are ineffective for addressing the cumulative impacts of a suite of projects promoted by government sectoral plans (e.g., a broad plan to construct multiple mines to develop a country’s aluminum industry), for example. EIA processes can also be subject to pro-development bias. Typically, developers finance and conduct the EIAs of their proposed projects, and “thus [EIAs] are often steered in favour of the project and not the environment.”⁴⁸

The limitations of EIA laws spurred the development of complementary SEA laws and regulations. SEA is the systematic and comprehensive process of evaluating the environmental effects of government policies, programs, or plans (collectively “government initiatives”).⁴⁹ The process is often initiated once the first version of a government initiative has been drafted.⁵⁰ At this stage, it is practical to reformulate and improve government initiatives based on SEA findings. With regard to SEA outputs, the process can predict broad changes in resource use, pollution and environmental degradation, and help policy makers determine the consistency of draft government initiatives with long-term development and environmental objectives.⁵¹ Because the purpose of SEA is to improve, not just assess, SEA can help direct environmentally risky projects away from sensitive areas, as well as help to formulate sector-specific risk mitigation and management measures.⁵²

It is also of note that SEA-like procedures can be applied during the negotiation of international agreements. For example, the laws of the European Union, Canada, and the United States require environmental assessments to be undertaken during the negotiation of international trade agreements.⁵³ The purpose of such assessment is to provide negotiators with information and

46. Assessing Environmental Impacts – A Global Review of Legislation, *supra* note 42, p. 21; Netherlands Commission for Environmental Assessment, *supra* note 18.

47. OECD, Applying SEA: Good Practice Guidance for Development Co-operation, p. 31 (2006); Implementing SEA (eds. M. Schmidt & L. Knopp), in Environmental Protection in the European Union, vol. 2, p. 6 (2004).

48. OECD, Applying SEA, *supra* note 47, p. 32.

49. Assessing Environmental Impacts – A Global Review of Legislation, *supra* note 42, pp. 3, 6.

50. Assessing Environmental Impacts – A Global Review of Legislation, *supra* note 42, p. 84.

51. UNEP, Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach, p. 92 (2004), <http://www.gdrc.org/uem/eia/textONUBr.pdf>

52. Environmental Impact Assessment & Strategic Environmental Assessment, *supra* note 51, p. 102.

53. See generally UNEP & International Institute for Sustainable Development, Sustainability Toolkit for Trade Negotiators, <https://cf.iisd.net/toolkits/sustainability-toolkit-for-trade-negotiators/>.

analysis that will allow them to identify the environmental trade-offs of proposed agreement terms and ultimately come to an agreement that minimizes environmental risk.

In Africa, most countries have EIA laws.⁵⁴ Nevertheless, EIA was introduced later and is less firmly embedded in Africa than in high-income European and North American countries.⁵⁵ Commentators have described that, in many African countries, “government control and enforcement of EIAs is ... weak ... allowing ... companies to conduct substandard assessments, to fail to apply appropriate mitigation, and even not to bother with the EIA process at all.”⁵⁶ In many cases, deficiencies can be attributed to a lack of trained personnel and the insufficient funding of environmental protection agencies.⁵⁷ Only a limited number of African countries have SEA laws, and the SEA laws that exist often make government performance of SEA voluntary.⁵⁸

In terms of leaders on the African continent, Ghana, Kenya, Mauritius, and South Africa are considered to have advanced legal frameworks for environmental assessment. It is no coincidence that these countries also have some of the strongest government institutions in Africa.

The Sinohydro Agreement and the Pressure to Rapidly Develop Ghana’s Aluminum Industry

This section provides context for Ghana’s decision to conclude the Sinohydro Agreement and examines the Sinohydro Agreement’s terms and the present state of Ghana’s domestic aluminum industry.

Contextualizing the Sinohydro Agreement

Ghana has an infrastructure deficit totaling over US\$30 billion.⁵⁹ In addition, since the end of the United Kingdom’s colonial rule over Ghana, Ghanaian political leaders have attempted to develop a domestic integrated aluminum industry to foster economic development.⁶⁰ Although one bauxite mine and one aluminum smelter have been developed, their attempts have largely failed due to a lack of affordable electricity (alumina refining and aluminum smelting are energy-intensive processes) and inadequate transportation infrastructure.⁶¹ In spite of this, in 2016, during his campaign for office, Ghanaian President Nana Akufo-Addo assured voters that he

54. Environmental Impact Assessment and Strategic Environmental Assessment *supra* note 52; M. Bekhechi & J. Merder, World Bank, *The Legal and Regulatory Framework of Environmental Impact Assessments*, p. xi (2002).

55. *Assessing Environmental Impacts – A Global Review of Legislation*, *supra* note 42, p. 8.

56. David P. Edwards et al., “Mining and the African Environment,” *Conservation Letters* 7 (Oct. 28, 2013).

57. Jennifer C. Li, USAID & Foundation for Environmental Security & Sustainability, “Environmental Impact Assessments in Developing Countries: An Opportunity for Greater Environmental Security?,” p. 5 (Working Paper No. 4, 2008).

58. *Environmental Impact Assessment & Strategic Environmental Assessment*, *supra* note 51, p. 85.

59. “Ghana faces a major infrastructure deficit in areas such as roads, water, bridges, electricity, hospitals, sanitation, estimated to be in the region of at least US\$30 billion, mainly due to the inadequacy of financial resources to undertake the requisite investment.” *Mid-Year Fiscal Policy Review of the 2018 Budget Statement and Economic Policy*, *supra* note 9.

60. Minister for Finance, *The Budget Statement and Economic Policy for the 2017 Financial Year*, ¶ 880 (presented to Parliament Mar. 2, 2017); Theophilus Acheampong & Kwabena Ata Mensah, *Towards an Integrated Bauxite and Aluminum Industry in Ghana*, NREGI (Position Paper, May 2018); Staff, “How the Aluminum Deal Foiled Ghana,” *Washington Post*, https://www.washingtonpost.com/archive/opinions/1980/12/14/how-the-aluminum-deal-foiled-ghana/f8bc342e-8ecc-48bf-b5e1456d2e92c8df/?noredirect=on&utm_term=.c21bf9a86099.

61. “The current Ghana railway system was constructed by British colonial authorities to enable access to mineral resources. As a result, the line is predominantly coastal, only extending some 360 km inland from Accra toward the Ashanti Region.” Oxford Business Group, Richard Dombo, CEO, Ghana Railway Development Authority (GRDA): Interview (2020), <https://oxfordbusinessgroup.com/interview/master-planner-richard-dombo-ceo-ghana-railway-development-authority-grda-investment-and-growth>; Staff, “GEPA pushes for alumina factory to refine bauxite locally,” *Graphic Online* (Nov. 25, 2020), <https://www.graphic.com.gh/business/business-news/gepa-pushes-for-alumina-factory-to-refine-bauxite-locally.html>.

would overcome past obstacles and establish an integrated aluminum industry.⁶² Additionally, he claimed that establishing bauxite mines and other components of the aluminum industry value chain would provide thousands of jobs and help to address the country's high youth unemployment.⁶³

In March 2017, approximately two months after President Nana Akufo-Addo took office, the Ghanaian Minister for Finance reaffirmed that creating an integrated aluminum industry was a presidential priority.⁶⁴ The minister also outlined that developing the industry would require the development of bauxite mines, a refinery sited near a bauxite mine, affordable and reliable energy sources, railway infrastructure for the transport of bauxite, the conversion of alumina to aluminum at the country's existing aluminum smelter, and the establishment of an industrial park dedicated to manufacturing aluminum-related products.⁶⁵

In June 2017, the Vice President of Ghana, after an official visit to China at the invitation of the Government of China, announced that the Government had signed a memorandum of understanding (the "MOU") with the Government of China, reflecting an agreement in principle to enter into an RFI deal.⁶⁶ The Vice President reported that pursuant to the MOU Chinese state enterprises and institutions will invest US\$15 billion in Ghana in exchange for access to five percent of Ghana's bauxite reserves.⁶⁷ The Ghanaian Senior Minister Yaw Osafo-Mafo also claimed that the China Development Bank would provide US\$10 billion of the US\$15 billion, and that the China Development Bank funds would be used to develop an alumina refinery, a railway to transport bauxite, and other domestic aluminum industry projects.⁶⁸ Nevertheless, the MOU's exact terms are unknown because the Government has not made the MOU widely available for public review.⁶⁹

In the latter half of 2018, Sinohydro, a Chinese state-owned enterprise specializing in infrastructure development, and the Government of Ghana concluded the Sinohydro Agreement, formally titled the Master Project Support Agreement Between Government of the Republic of Ghana and Sinohydro Corporation Limited.⁷⁰ The Ministry of Finance and the Vice President

62. Staff, "I'll establish integrated aluminium industry," Today Ghana Online, <https://www.todaygh.com/ill-establish-integrated-aluminium-industry/>.

63. *Id.*

64. The Budget Statement and Economic Policy for the 2017 Financial Year, *supra* note 60, p. 151 (presented to Parliament Mar. 2, 2017).

65. *Id.* at 151–52.

66. Mark Babatunde, "Ghana Signs \$10 Billion Bauxite Exploration Deal with China," Face2Face Africa (Jul. 21, 2017), <https://face2faceafrica.com/article/ghana-china-bauxite>; Staff, "Osafo Marfo confirms Ghana has proven bauxite reserves worth \$460b," Ghana Business News, <https://www.ghanabusinessnews.com/2017/06/29/osafo-marfo-confirms-ghana-has-proven-bauxite-reserves-worth-460b/>; Nathan Gadugah, "\$10bn Chinese loan agreement could create over 100,000 jobs - Osafo Mafo," Joy Online (Jun. 30, 2017), <https://www.myjoyonline.com/politics/2017/June-30th/chinese-10bn-loan-agreement-could-create-over-100000-jobs-osafo-mafo.php>.

67. Staff, "Ghana steps up infrastructure drive with new funding from China," Oxford Business Group (Aug. 31, 2017). <https://oxfordbusinessgroup.com/news/ghana-steps-infrastructure-drive-new-funding-china>; Kwasi Gyamfi Asiedu, *supra* note 17.

68. *Supra* note 67.

69. Gadugah, *supra* note 66.

70. Abu Mubarik, "Akufo-Addo in China: \$2 billion Sinohydro deal signed," Pulse (Sept. 2, 2018), <https://www.pulse.com.gh/ece-frontpage/infrastructure-development-akufo-addo-in-china-dollar2-billion-sinohydro-deal-signed/pw00t6b>.

and his advisers played key roles in negotiating the agreement.⁷¹ The Sinohydro Agreement stems from the MOU, but the intricacies of the relationship between the two instruments are not apparent.⁷²

The Parameters of the Sinohydro Agreement

The Sinohydro Agreement parties are the Government of Ghana and Sinohydro. However, the agreement permits Ghana to transfer its obligations to the Ghana Integrated Aluminum Development Corporation (GIADEC), a Ghanaian state-owned enterprise created by legislation in 2018 with a mandate to develop and promote aluminum industry projects and related infrastructure.⁷³ GIADEC is managed by a board that consists of representatives from the aluminum industry, the Ghanaian Mineral Commission, the Ghanaian Ministry of Land and Natural Resources and the Association of Ghana Industries (a prominent Ghanaian business association), members of parliament, and two traditional leaders from Ghana's bauxite regions.⁷⁴

Under the terms of the Sinohydro Agreement, Ghana pledged to use income generated from the sale of alumina (refined bauxite) to repay loans that will fund the construction of US\$2 billion worth of infrastructure projects in Ghana.⁷⁵ The planned infrastructure projects, which primarily consist of road projects,⁷⁶ are listed in the agreement, and the agreement stipulates that the projects are to be constructed in two phases.⁷⁷ Each of the planned projects will require its own EPC contract, and under Ghanaian law, the Ghanaian Parliament ("Parliament") must approve the contracts.⁷⁸ The Sinohydro Agreement requires that Sinohydro be the exclusive EPC contractor for the projects.⁷⁹

Missing from the agreement is a designated lender. The agreement directs Sinohydro to take the lead on negotiating loan agreements with a lender to cover 85 percent of the costs of the planned infrastructure projects.⁸⁰ The parties deferred the decision on how the remainder of the project costs will be covered.⁸¹ The Sinohydro Agreement stipulates that once Sinohydro has arranged loan agreements, Ghana shall enter into deferred payment agreements (DPAs) with Sinohydro to assume all loan obligations.⁸² The Sinohydro Agreement and DPAs, which mirror the loan terms specified in the Sinohydro Agreement, indicate that loans will have a 15-year repayment period

71. Anonymous senior EPA official, interviewed by author (Mar. 2019); Anonymous senior Minerals Commission official, interviewed by author (Mar. 2019).

72. Abu Mubarik, *supra* note 70.

73. It is unclear whether Ghana has transferred its obligations. Minister for Finance, The Budget Statement and Economy Policy of the Government of Ghana for the 2019 Financial Year, ¶ 560 (presented to Parliament Nov. 15, 2018); IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10; GIADEC, Company Profile, <https://www.giadec.com/about-us/company-profile/>.

74. Sebastian Purwins, "Bauxite mining at Atewa Forest Reserve, Ghana: a political ecology of a conservation-exploitation conflict," *GeoJournal* (Sept. 24, 2020); GIADEC, Board Members, www.giadec.com/about-us/board-members/.

75. Even so, the Government can use other sources of income to meet its repayment obligations. IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20.

76. Approximately \$1.5 billion is being directed towards major road projects, and four road projects have already commenced. Staff, "\$2 billion Sinohydro deal to delay due to coronavirus – CDD Ghana," GhanaWeb (Apr. 2, 2020), <https://www.ghanaweb.com/GhanaHomePage/business/US-2-billion-Sinohydro-deal-to-delay-due-to-coronavirus-CDD-Ghana-911863>.

77. Sinohydro Agreement, Appendix 3; IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20.

78. IMANI ALERT, *supra* note 14, p. 1; see, e.g., EPC Contract for Construction/Rehabilitation of Selected Roads and Interchanges in Ghana – Phase 1 Lot 3 (Tamale Interchange), Contract No.: DUR/CE/EPC/SYNOHYDRO/LOT3/TAMALA/2018.

79. Sinohydro Agreement, clause 2.2; IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20.

80. Sinohydro Agreement, clauses 1, 2; IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20; see, e.g., DPA for the Construction/Rehabilitation of Selected Roads and Interchanges in Ghana-Phase 1-Lot 1 (Accra Inner City Roads), *supra* note 13, clause 4.2.

81. IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20.

82. Sinohydro Agreement, clause 2.2; IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20.

and a six-month USD London Interbank Offered Rate plus 2.8 percent per annum.⁸³ The loans are to have a three-year grace period to provide Ghana time to develop its domestic aluminum industry, and, in turn, the revenue streams that it needs to satisfy its repayment and collateral obligations.⁸⁴

As for the collateral obligations, the Sinohydro Agreement and DPAs stipulate that the Government must maintain a balance sufficient to cover two loan repayment installments (out of a total of the 24 semi-monthly payments) in an offshore escrow account at all times, and that the account shall be for the exclusive benefit of Sinohydro.⁸⁵ The account is also to be Ghana's only account for receiving income generated from the sale of refined bauxite.⁸⁶

If Ghana fails to comply with its collateral or repayment obligations, Sinohydro is entitled to prepayment of outstanding loan balances and may seize the full balance of the escrow account.⁸⁷ To enforce the terms of the Sinohydro Agreement and the DPAs, Ghana consented to arbitrating disputes before an arbitral panel of the London Court of International Arbitration, a private dispute resolution institution.⁸⁸

Since the Sinohydro Agreement entered into force, contractors have commenced the construction of road projects and a substantial portion of the loan funds have been cleared for disbursement. In December 2018, the Ghanaian Parliament approved DPAs and EPC contracts for ten projects with a combined cost of US\$646 million, and subsequently, in 2019, loan funds were disbursed to cover the projects' costs.⁸⁹ These projects represent the first phase Sinohydro projects. Media outlets and Ministry of Finance reports suggest that the second phase will include additional road projects valued at approximately US\$850 million.⁹⁰ However, the disbursement of the remaining

83. Sinohydro Agreement, clause 2.3; IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20; see, e.g., DPA for the Construction/Rehabilitation of Selected Roads and Interchanges in Ghana-Phase 1-Lot 1 (Accra Inner City Roads), *supra* note 13, clauses 5, 7.

84. Sinohydro Agreement, clause 2.3; see, e.g., DPA for the Construction/Rehabilitation of Selected Roads and Interchanges in Ghana-Phase 1-Lot 1 (Accra Inner City Roads), *supra* note 13, clause 5.

85. Term Sheet Relating to Deferred Payment Agreement between The Republic of Ghana represented by the Ministry of Finance or its Assignee (as the "Debtor") and Sinohydro Corporation Limited (as the "Creditor"); IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20; see, e.g., DPA for the Construction/Rehabilitation of Selected Roads and Interchanges in Ghana-Phase 1-Lot 1 (Accra Inner City Roads), *supra* note 13, clause 8.

86. Term Sheet Relating to Deferred Payment Agreement between The Republic of Ghana represented by the Ministry of Finance or its Assignee (as the "Debtor") and Sinohydro Corporation Limited (as the "Creditor"); Mid-Year Fiscal Policy Review of the 2018 Budget Statement and Economic Policy, *supra* note 9, p. 40; see, e.g., DPA for the Construction/Rehabilitation of Selected Roads and Interchanges in Ghana-Phase 1-Lot 1 (Accra Inner City Roads), *supra* note 13, clause 8.

87. Term Sheet Relating to Deferred Payment Agreement between The Republic of Ghana represented by the Ministry of Finance or its Assignee (as the "Debtor") and Sinohydro Corporation Limited (as the "Creditor"); see, e.g., DPA for the Construction/Rehabilitation of Selected Roads and Interchanges in Ghana-Phase 1-Lot 1 (Accra Inner City Roads), *supra* note 13, clauses 15, 16.

88. Sinohydro Agreement, clause 7; see, e.g., DPA for the Construction/Rehabilitation of Selected Roads and Interchanges in Ghana-Phase 1-Lot 1 (Accra Inner City Roads), *supra* note 13, clause 22.

89. Minister for Finance, The Budget Statement and Economic Policy of the Government of Ghana for the 2020 Financial Year, p. 63 (presented to Parliament Nov. 13, 2019); Staff, "First Payment on Infrastructure-for-Bauxite Deal Made by China to Ghana," Aluminum Insider (Nov. 18, 2019), <https://aluminiuminsider.com/first-payment-on-infrastructure-for-bauxite-deal-made-by-china-to-ghana/>; Staff, "Ghana receives first tranche of \$649m Sinohydro money for construction," GhanaWeb (Nov. 21, 2018), <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Ghana-receives-first-tranche-of-649m-Sinohydro-money-for-construction-702681>; IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, pp. 20, 67.

90. The Budget Statement and Economic Policy of the Government of Ghana for the 2020 Financial Year, *supra* note 89, p. 64; Minister for Finance, Mid-Year Fiscal Policy Review of the 2019 Budget Statement and Economic Policy, ¶ 196 (presented to Parliament Jul. 29, 2019); Staff, "China releases funding for Sinohydro projects – Bawumia reveals," Graphic Online (Nov. 11, 2019), <https://www.graphic.com.gh/news/general-news/ghana-news-china-releases-funding-for-phase-1-of-sinohydro-roads->

loan funds may be delayed due to the economic impacts of the COVID-19 pandemic.⁹¹ The Chinese government has assured the Ghanaian Government that planned projects will not be cancelled.

The State of the Ghanaian Aluminum Industry

Ghana agreed to the Sinohydro Agreement loan terms based on the assumption that the Government would receive adequate income from alumina sales over loan repayment periods. Yet, Ghana does not have an alumina refinery—i.e., Ghana’s aluminum industry does not presently have the means to produce alumina. The Government has indicated that, as a failsafe, it may rely on receipts from the sale of aluminum and unrefined bauxite to meet its loan obligations. However, Ghana only has one aluminum smelter and one bauxite mine in operation, and these projects do not generate enough revenue to satisfy Ghana’s loan obligations.⁹² The mine and smelter have both faced profitability challenges.⁹³

To address these shortcomings, the Government and GIADEC have developed the Integrated Aluminum Industry Outline Masterplan (the “Integrated Aluminum Industry Plan”). GIADEC expressed that it intends to establish up to three new bauxite mines, three new alumina refineries, and one new aluminum smelter.⁹⁴ GIADEC plans to hold a minimum thirty percent stake in new aluminum industry projects alongside private investors.⁹⁵ VALCO, the Ghanaian state-owned

[bawumia-reveals.html](#); Nosmot Gbadamosi, “Ghana’s Bauxite Boom,” Foreign Policy (Jan. 29, 2020), <https://foreignpolicy.com/2020/01/28/china-investment-bauxite-mining-ghana-infrastructure/>.

91. The contracting parties expected that phase 2 would commence in 2019. Sinohydro Agreement, clause 1.5; “US\$2 billion Sinohydro deal to delay due to coronavirus – CDD Ghana,” *supra* note 76; Nosmot Gbadamosi, “Ghana high court considers NGO case against bauxite mine,” China Dialogue (Oct. 21, 2020), https://chinadialogue.net/en/nature/ghana-high-court-considers-ngo-case-against-bauxite-mine/?utm_source=CD+bilingual+newsletter_Outside+China&utm_campaign=12ba11be8b-EMAIL_CAMPAIGN_2019_05_23_03_03_COPY_01&utm_medium=email&utm_term=0_fea4a231d4-12ba11be8b-46898666&mc_cid=12ba11be8b&mc_eid=d2c0012e37.

92. IMANI ALERT, *supra* note 14, pp. 5–7; see generally IMANI Center for Policy. & Education, Special Report: Ghana’s “Integrated Aluminum” Fever (Feb. 5, 2010).

93. The 2020 budget statement states that “discussions are ongoing with VALCO and Ghana Bauxite Company to reshape these businesses to become profitable and well-functioning companies.” In addition, in August 2020, the Board Chairman of VALCO announced that “He announced plans to clear VALCO’s legacy debts and make it commercially viable for growth.” The Budget Statement and Economic Policy of the Government of Ghana for the 2020 Financial Year, *supra* note 89, p. 138; Staff, “Ghana’s economy to witness US\$10bn boost with revamping of Integrated Aluminum Industry,” Ghana Web (Aug. 27, 2020), <https://www.ghanaweb.com/GhanaHomePage/business/Ghana-s-economy-to-witness-US-10bn-boost-with-revamping-of-Integrated-Aluminum-Industry-1044043>. “Receipts from the sale of bauxite saw contraction of 53.7 percent in 2018.” Staff, “Ghana seeks joint venture partners for integrated bauxite development,” Ghana Web (Feb. 24, 2020); <https://www.ghanaweb.com/GhanaHomePage/business/Ghana-seeks-joint-venture-partners-for-integrated-bauxite-development-875386>. See also Farida Dawkins, “Chinese bauxite company in Ghana under fire after report shows they illegally profited \$90m,” Face2Face Africa (Jul. 31, 2018), <https://face2faceafrica.com/article/chinese-bauxite-company-in-ghana-under-fire-after-report-shows-they-illegally-profited-90m>.

94. The Budget Statement and Economic Policy of the Government of Ghana for the 2020 Financial Year, *supra* note 89, pp. 138–39; GIADEC, Future Operations, <https://www.giadec.com/operations/future-operations/>.

95. GIADEC, Future Operations, *supra* note 94.

enterprise that operates Ghana's existing aluminum smelter, also plans to increase its smelter's capacity. The retrofit is expected to take three to five years to complete.⁹⁶

As recent as December 2020, GIADEC had not formed joint ventures with investors for the planned mining, refining, and smelting projects.⁹⁷ Moreover, none of the planned aluminum projects have been completed,⁹⁸ raising doubts as to Ghana's ability to pay back the Sinohydro Agreement loans. The International Monetary Fund (IMF) stated that "[i]t will ... take considerable effort and time to put into place GIAD[E]C's capabilities to produce enough refined bauxite to cover debt service under the [Sinohydro loan] agreement[s]."⁹⁹ For instance, large extractive projects can "cost between [US]\$3 billion and [US]\$15 billion and take 10 years or more from discovery to commercial operation and several more years for initial investments to be recouped."¹⁰⁰ Thus, even in the best-case scenario, the planned aluminum industry projects may not generate enough revenue to meet Ghana's loan obligations until well after the loans' three-year grace periods have ended.¹⁰¹ The IMANI Center for Policy & Education, a Ghanaian think-tank focused on market growth and development, asserted that the likelihood that the Government will generate adequate revenue from the aluminum industry by the end of the loans' grace period is "almost nil."¹⁰² The IMF and the Africa Centre for Energy Policy, a research and advocacy organization focused on energy and extractive sector governance, have similarly warned that Ghana may not be able to meet repayment schedules.¹⁰³

Although the Sinohydro Agreement and DPAs permit Ghana to use any source of income to meet its repayment obligations, it is not apparent that Ghana has alternative income streams that can

96. "Ghana has called for domestic and international partners to help restore and upgrade the state-owned Volta Aluminum Company (VALCO) smelter, to reach a capacity of 300,000 t/yr by 2025." Craig Guthrie, "Ghana Seeks Partners for Aluminum Smelter Upgrade," *Mining Magazine* (Sept. 7, 2020), <https://www.miningmagazine.com/plant/news/1394607/ghana-seeks-partners-for-aluminium-smelter-upgrade>; Staff, "GIADEC Initiates A 5-Year Recovery Plan to 'Rescue' VALCO," *Peace FM* (Aug. 26, 2020), <https://www.peacefmonline.com/pages/business/industry/202008/425059.php>; see also The Budget Statement and Economic Policy of the Government of Ghana for the 2019 Financial Year, *supra* note 73, p. 139.

97. The Budget Statement and Economic Policy of the Government of Ghana for the 2020 Financial Year, *supra* note 89, pp. 138–39.

98. The President predicted that joint ventures would be established for planned projects by the end of 2020. Staff, "Ghana Government to decide on primary investors for Bauxite mining by 2020," *Mining & Quarry World* (Feb. 21, 2020), <https://mqworld.com/2020/02/21/ghana-government-decide-prime-investors-bauxite-mining-2020/>; see also The Budget Statement and Economic Policy of the Government of Ghana for the 2020 Financial Year, *supra* note 89, p. 138; Mid-Year Fiscal Policy Review of the 2019 Budget Statement and Economic Policy, *supra* note 90, ¶ 192; Prince Appiah, GIADEC signs MoU with Bauxite Minerals Group to expand Ghana's Bauxite Operations, *Joy Online* (Oct. 15, 2020), <https://www.myjoyonline.com/business/mining/giadc-signs-mou-with-bauxite-minerals-group-to-expand-ghanas-bauxite-operations/>.

99. IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20; It's not too late to come clean on US\$2bn Sinohydro deal terms – NRGi Report, *supra* note 27; see also The Budget Statement and Economic Policy of the Government of Ghana for the 2020 Financial Year, *supra* note 89, p. 138.

100. Halland et al., *supra* note 20, at 4. The Government has turned to the African Development Bank for funding for planned aluminum industry projects. Some commentators suggest that it will require over US\$40 billion in upfront investment to realize the development of Ghana's aluminum industry. Staff, "Ghana seeks AfDB funding to boost aluminium industry," *Mining Review Africa* (Mar. 5, 2020), <https://www.miningreview.com/base-metals/ghana-seeks-afdb-funding-to-books-aluminium-industry/>; IMANI ALERT, *supra* note 14, p. 6.

101. Staff, "Ghana could lose collateral to Sinohydro in bauxite-backed-loan – IMF warns," *GhanaWeb* (Mar. 2, 2020), <https://www.ghanaweb.com/GhanaHomePage/business/Ghana-could-lose-collateral-to-Sinohydro-in-bauxite-backed-loan-IMF-warns-882520/>; IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 19.

102. IMANI ALERT, *supra* note 14, p. 4; Staff, "'Bauxite mining for Sinohydro deal to start in 2020' — Bawumia's advisor," *The World News* (Nov. 5, 2019), <https://theworldnews.net/gh-news/bauxite-mining-for-sinohydro-deal-to-start-in-2020-bawumia-s-advisor>.

103. IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, p. 20; It's not too late to come clean on US\$2bn Sinohydro deal terms – NRGi Report, *supra* note 27; Staff, "ACEP Says Ghana Cannot Repay \$2bn Sinohydro Loan," *Modern Ghana* (Oct. 2,

be dedicated to the repayment of the infrastructure loans. World Bank research indicates that RFI agreement recipient countries primarily rely on the natural resources designated in their RFI agreements to meet their loan obligations.¹⁰⁴ This accords with the fact that government budgetary constraints, among other capital constraints, is a moving force behind governments linking infrastructure financing to extractive sector projects. Ghana is not exceptional in this regard. In recent years, Ghana has run national budget deficits of approximately US\$3 billion, and the government debt-to-gross domestic product (GDP) ratio has hovered between fifty and sixty percent.¹⁰⁵ These figures worsened due to the COVID-19 pandemic.¹⁰⁶ On July 23, 2020, the Minister for Finance reported to Parliament that “Ghana’s overall economic growth and revenue are expected to fall sharply while expenditures are expected to rise,” and, in September 2020, Ghana’s central bank reported that Ghana’s debt-to-GDP ratio had reached seventy-one percent.¹⁰⁷

In addition, there is an expectation that Ghana will increase its domestic bauxite production by more than a de minimis volume, even though such a requirement is not explicitly included in the Sinohydro Agreement or its subsidiary instruments. The Chinese Government’s interest in facilitating the Sinohydro Agreement and MOU was directly linked to its desire for Ghana to increase its bauxite exports.¹⁰⁸

It would also be difficult for Ghana to back out of the Sinohydro Agreement and DPAs after loan funds have been used to construct or commence construction on a significant portion of the planned infrastructure projects. If Sinohydro uphold its end of the deal, it would likely expect Ghana to do the same. Notably, by the time loan grace periods end and payments are due, many of the Sinohydro Agreement infrastructure projects will likely be constructed or commenced. Construction of road projects began less than eighteen months after the negotiation of the Sinohydro Agreement, and some of the projects are expected to be completed by 2022.¹⁰⁹ While renegotiation is possible, the Natural Resource Governance Institute found that “[a]lthough ultimately [resource-backed loans] were successfully renegotiated in several

2019), <https://www.modernghana.com/news/958667/acep-says-ghana-cannot-repay-2bn-sinohydro-loan.html>.

104. Halland et al., *supra* note 8, p. 31.

105. The IMF explained: “The elevated debt burden and fiscal risks from the financial and energy sectors limit policy space. The large loss of foreign exchange reserves in 2018 is a pointed reminder of Ghana’s exposure to shifting investors’ sentiment and external shocks, amplified by the government’s still elevated financing needs. Ghana’s legacy of political budget cycles will test the authorities’ commitment to macroeconomic discipline and reform in 2020—a challenge that the authorities intend to face head on.” IMF, Ghana: Seventh and Eighth Reviews, *supra* note 10, Key Issues; see also IMF, IMF Executive Board Concludes 2019 Article IV Consultation with Ghana, Press Release No. 19/455 (Dec. 12, 2019).

106. “The economic shock of the pandemic has manifested through external trade disruptions (particularly with China), decline in commodity prices ([sic]particularly oil whose prices have fallen by more than half, and tightening of global financial markets.” Minister for Finance, Mid-Year Review of the Budget Statement and Economic Policy of the Government of Ghana & Supplementary Estimate for the 2020 Financial Year, ¶¶ 96, 304, 321–22 (presented to Parliament Jul. 23, 2020).

107. The Government’s budget deficit is expected to increase partly due to decreasing aluminum export receipts. Mid-Year Review of the Budget Statement and Economic Policy of the Government of Ghana & Supplementary Estimate for the 2020 Financial Year, *supra* note 106, ¶¶ 96, 304, 321–22; see also Moses Mozard Dzawu & Ekow Dontoh, “Ghana Central Bank Says Options Waning as Debt Hits Four-Year High,” Bloomberg (Nov. 23, 2020), <https://www.msn.com/en-us/money/news/ghana-central-bank-says-options-waning-as-debt-hits-four-year-high/ar-BB1bhCiB>.

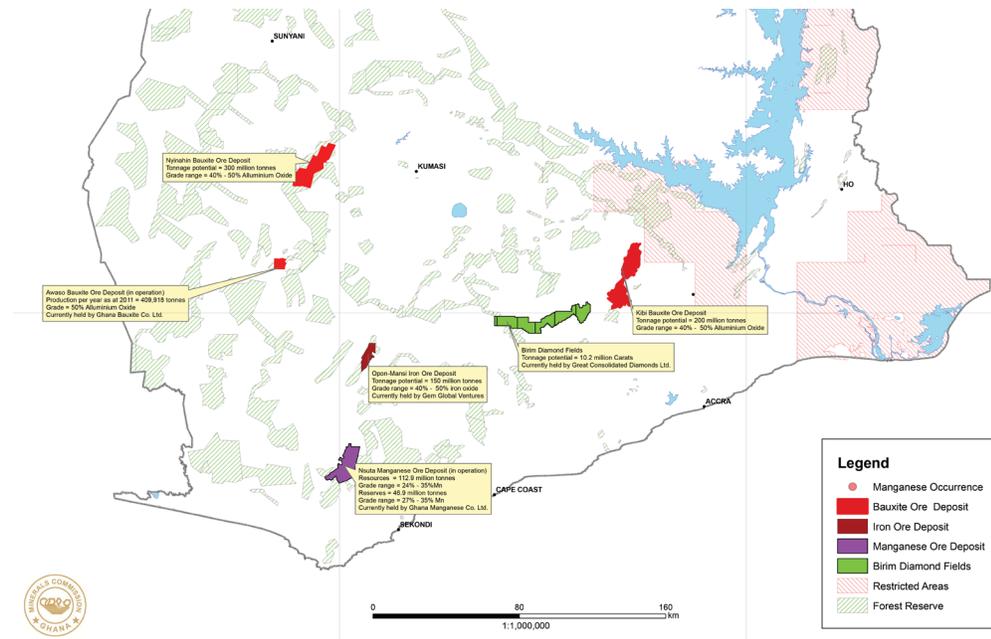
108. *Supra* notes 27 & 28.

109. Eric Olander, “China’s flexes speed advantage in Ghana’s bauxite for roads deal,” The Africa Report (Nov. 28, 2019), <https://www.theafricareport.com/20569/chinas-flexes-speed-advantage-in-ghanas-bauxite-for-roads-deal/>; Mid-Year Fiscal Policy Review of the 2019 Budget Statement and Economic Policy, *supra* note 90, ¶ 195; Staff, “Ghana: ‘Construction in Buem of Four Roads in One Year Unprecedented’- Jasikan Chief Staff,” All Africa (Oct. 22, 2020), <https://allafrica.com/stories/202010230263.html>.

instances, renegotiation was difficult and challenges remain in restoring financial stability in [the loan recipient countries].”¹¹⁰ Thus, to avoid the harsh penalties of collateral loss and a demand of prepayment, there is pressure on Ghana to rapidly develop its domestic aluminum industry.¹¹¹

Although the President’s political and national development agenda is the primary reason that creating an integrated aluminum industry is a government priority, the Sinohydro Agreement loans have added “fuel to the fire” due to their potential legal and fiscal implications.

Figure 1. Map of Ghana’s Bauxite Deposits (Pictured in Red)¹¹²



Environmental Risks Associated with Aluminum Industry Projects

Even without knowing the ultimate mix and number of aluminum industry projects, one thing is clear: bauxite mining, alumina refining, and aluminum smelting pose substantial environmental and social risks. Past experiences in Ghana and other countries, such as Guinea, Malaysia, and India, demonstrate that aluminum industry projects often cause deforestation and loss of biodiversity, impair water and air quality, and harm human health.¹¹³ The pressure on GIADEC to develop the Integrated Aluminum Industry Plan quickly so that Ghana can meet its Sinohydro Agreement loan obligations augments the likelihood that such risks will materialize.

The remainder of this section takes a closer look at the environmental and social risks associated with the Integrated Aluminum Industry Plan projects. Although this study does not examine the

110. Resource-Backed Loans: Pitfalls and Potential, *supra* note 7, p. 38.
 111. See Part II.B.
 112. This map was provided by a Minerals Commission geologist in March 2019.
 113. See generally Human Rights Watch, “What Do We Get Out of It?”: The Human Rights Impact of Bauxite Mining in Guinea (Oct. 4, 2018); Amnesty International, Don’t Mine Us Out of Existence: Bauxite Mine and Refinery Devastate Lives in India (2010); Staff, “Bauxite in Malaysia: The environmental cost of mining,” BBC (Jan. 19, 2016); Staff, “Malaysia to end bauxite mining ban despite environment fears,” *Phys.org* (Feb. 19, 2019); Lawal, *supra* note 17.

impacts of the complementary energy and infrastructure investments/projects (e.g., roads and rail) that are required to realize Ghana’s goal of developing an integrated aluminum industry, these types of investments can also have wide-ranging negative effects on environmental and social conditions.

Deforestation & Biodiversity Impacts

Aluminum industry projects would likely contribute to deforestation and biodiversity loss across Ghana, which presently has one of the highest rates of deforestation in Africa. According to the World Resource Institute, Ghana experienced the “highest percent rise in primary forest loss between 2017 and 2018 of any tropical country.”¹¹⁴

Of the aluminum industry projects, bauxite mining poses the greatest threat. Mining companies generally extract bauxite using open pit or strip-mining methods, which involves removing topsoil and everything above it (e.g., trees and plants) to excavate the underlying bauxite.¹¹⁵ The amount of forest habitat disturbed at any given mining site can be substantial because bauxite mines are often large, even in relation to mines for other types minerals.¹¹⁶ As for alumina refineries and aluminum smelters, developers would have to clear land to build the facilities. With these types of projects, it also common for land to be cleared to construct worker housing, office buildings, and railways and roads to facilitate the transport of bauxite and other products.¹¹⁷ Such road projects frequently open up forest frontiers to settlement, and, if not carefully managed, new roads can lead to uncontrolled colonization and development of forest lands.¹¹⁸

When considering deforestation, it also important to weigh the loss of ecosystem services. Two of Ghana’s bauxite deposits lie under the Tano-Offin Forest Reserve and the Atewa Forest Reserve, which contain Ghana’s last remaining tracts of biodiversity-rich upland evergreen forest. The canopies of these forests intercept moisture from clouds, facilitating the transfer of water from the atmosphere to small creeks that feed into larger streams and rivers that provide water for human consumption and crop irrigation.¹¹⁹ The forests also filter water and thus can greatly reduce

114. Mikaela Weisse & Elizabeth D. Goldman, “The World Lost a Belgium-sized Area of Primary Rainforests Last Year,” World Resources Institute Blog (Apr. 25, 2019), <https://www.wri.org/blog/2019/04/world-lost-belgium-sized-area-primary-rainforests-last-year#:~:text=The%20World%20Lost%20a%20Belgium-sized%20Area%20of%20Primary%20Rainforests%20Last%20Year,-by%20Mikaela%20Weisse&text=The%20tropics%20lost%2012%20million,area%20the%20size%20of%20Belgium>.

115. International Aluminum Institute (“IAI”), Sustainable Bauxite Mining Guidelines, p. 6 (May 2018), https://www.world-aluminium.org/media/filer_public/2018/05/18/170518_sbm_g_final.pdf; Nosmot Gbadamosi, Ghana’s Bauxite Boom, *supra* note 90.

116. IAI, *supra* note 115; World Wildlife Fund (“WWF”), Boom in Raw Materials: Between Profits and Losses, p. 37 (Oct. 2018).

117. WWF, *supra* note 116, pp. 43–44.

118. “Mining roads [] certainly encourage major movements of populations into hitherto sparsely populated regions and this will increase pressures from land clearing and bushmeat hunting for local consumption. Further, as roads cut into previously inaccessible forests, they [] pave the way for an influx of commercial bushmeat hunting to supply major urban centers and foreign labor, and wildlife traders...” David P. Edwards et al., *supra* note 56 (internal citations omitted); see also Man Li et al., “Impacts of Road Expansion on Deforestation and Biological Carbon Loss in the Democratic Republic of Congo,” *Environmental & Res. Econ.*, 60, pp. 433–69 (2014); Laurance et al., “Bad Roads, Good Roads,” in *Handbook of Road Ecology*, p. 1015 (2015); Kalifi Ferretti-Gallon & Jonah Busch, Center for Global Development, “What Drives Deforestation and What Stops It? A Meta-Analysis of Spatially Explicit Econometric Studies” (Working Paper No. 361, Apr. 17, 2014).

119. IUCN, A Rocha Ghana & IVM Institute for Environmental Studies, “The Economics of the Atewa Forest Range” Ghana, pp. 62–63 (2016); Professor Alfred Apau Oteng-Yeboah, interviewed by author (Mar. 2019); see also Staff, “Forests That Drink From The Clouds,” Global Wildlife Conservation Blog (Sept. 24, 2018), https://www.globalwildlife.org/blog/forests-that-drink-from-the-clouds/?gclid=CjwKCAiAtej9BRAvEiwA0UAWXqcmYqj7sVh-DiBfujdN01H_vwsUrvqGeHyiHtyVOTeI7CpJEGaMRRoCpi0QAvD_BwE.

municipalities' water filtration/purification costs.¹²⁰ These ecosystem services would be lost or greatly impaired, if the forests are wiped out or become heavily fragmented or degraded.

Figure 2. Ghana's Awaso Bauxite Mine¹²¹



Environmental Pollution & Human Health Impacts

Aluminum industry projects would likely increase communities' exposure to airborne and waterborne pollutants. Bauxite mines, red mud ponds, and trucks and trains transporting bauxite all emit significant amounts of red bauxite dust. This dust can irritate the eyes, ears, nose, and throat and cause skin conditions.¹²² Dust particles are also known to cause or trigger respiratory and cardiovascular diseases.¹²³ For example, local communities around Ghana's existing bauxite mine at Awaso (majority owned by a Chinese company) have suffered from various respiratory illnesses since the development of bauxite mining there.¹²⁴

Bauxite mines and alumina refineries may also threaten water resources, which should be of particular concern in Ghana where approximately one quarter of the population relies on

120. Katie Lyons & Todd Gartner, "3 Surprising Ways Water Depends on Healthy Forests," World Resources Institute Blog (Mar. 21, 2017), <https://www.wri.org/blog/2017/03/3-surprising-ways-water-depends-healthy-forests#:~:text=Forests%20help%20control%20the%20water,down%20the%20flow%20of%20runoff>.

121. Photograph credited to Thomas Cristofolletti / Ruom.

122. Noor H. Abdullah, "Potential Health Impacts of Bauxite Mining in Kuantan," Malaysian J. Med. Sciences (2016); Jeffrey Fralick, "App will track harmful dust from bauxite mining in Guinea," Columbia University Earth Institute (Jul. 17, 2020), <https://blogs.ei.columbia.edu/2020/07/17/app-dust-bauxite-mining-guinea/>; Amnesty International, *supra* note 113.

123. *Supra* note 122.

124. Staff, "Yes, Ghana should mine bauxite, but not in critical ecosystems like Atewa Forest," Landscape News (Mar. 2, 2020), <https://news.globallandscapesforum.org/42895/yes-ghana-should-mine-bauxite-but-not-in-critical-ecosystems-like-atewa-forest/>.

surface water to meet essential needs, such as cooking, bathing, and drinking.¹²⁵ Because bauxite deposits can exist alongside toxic heavy metals, the discharge of water (e.g., stormwater) from bauxite mines can release toxic substances into water bodies to the detriment of aquatic life and persons.¹²⁶ The seriousness of these pollutants is evidenced by the Malaysian government's decision to ban bauxite mining for three years in response to heavy metal pollution linked to bauxite mining.¹²⁷ Additionally, residents of communities surrounding Ghana's Awaso mine have stated that they do not drink surface water after rains because they fear effluent from the mine will make them sick.¹²⁸

With regard to alumina refineries, the process of transforming bauxite to alumina produces highly corrosive and saline red mud as waste that is typically stored in artificial holding ponds.¹²⁹ When these ponds leak, overflow, or collapse (e.g., as a result of heavy rains), the impacts have included soil salinization, fish die-off, and groundwater and surface water contamination.¹³⁰ In India, people who bathed or washed their clothes in a river contaminated by red mud reported that they developed rashes and blisters.¹³¹

Figure 3. A Red Mud Pond in Ireland¹³²



125. UN Development Programme, "Ending the dry season with sustainable water management," Medium (Sept. 11, 2019), <https://undp.medium.com/ending-the-dry-season-with-sustainable-water-management-1d9e0ed2f3ea>.

126. WWF, *supra* note 116, pp. 36–37.

127. When Malaysia banned bauxite mining, it was one of the largest exporters of bauxite in the world. Staff, "Heavy Metal Pollution Found in Pahang's Bauxite Mining Areas," Aluminum Insider (Nov. 25, 2016), <https://aluminiuminsider.com/heavy-metal-pollution-found-pahangs-bauxite-mining-areas/>; Bauxite in Malaysia: The environmental cost of mining, *supra* note 113. Oil and grease from trucks and machines used to transport and extract bauxite, fuel storage depots and refueling facilities can also contaminate water bodies, especially when there is uncontrolled runoff or accidental spills. IAI, *supra* note 115, p. 59.

128. Landscape News, *supra* note 124; Daryl Bosu, Deputy National Director of A Rocha Ghana, interviewed by author (Mar. 2019).

129. WWF, *supra* note 116, p. 50; Ken Stanford, "Red Mud – Addressing the Problem," Aluminum Insider (Nov. 15, 2016), <https://aluminiuminsider.com/red-mud-addressing-the-problem/>.

130. Amnesty International, *supra* note 113, pp. 45–57; WWF, *supra* note 116, p. 50; Max Nathanson, "Norsk Hydro accused of Amazon toxic spill, admits 'clandestine pipeline'," Mongabay (Feb. 27, 2018), <https://news.mongabay.com/2018/02/norsk-hydro-accused-of-amazon-toxic-spill-admits-clandestine-pipeline/>.

131. Amnesty International, *supra* note 113, p. 50.

132. IAI, *supra* note 115.

The Government's Management of the Environmental Risks and Public Concerns

President Nana Akufo-Addo and GIADEC have stated the Integrated Aluminum Industry Plan will be implemented in a manner consistent with international standards and sustainability principles. However, the Government and GIADEC have not taken adequate measures to address the environmental risks associated with planned projects thus far. The Government has not undertaken an SEA of the planned aluminum industry developments. The Government and GIADEC have committed to mining bauxite in sensitive forest reserves. The Government and GIADEC have also provided inadequate transparency with respect to the Integrated Aluminum Industry Plan and the implications of the Sinohydro Agreement loan terms. This Part analyzes these issues in detail.

The Government Has Not Conducted an SEA of the Aluminum Industry Plans

Ghana's legal framework for environmental assessment consists of the Environmental Protection Act and the Environmental Assessment Regulations (collectively the "Ghanaian environmental assessment laws" or "Ghana's environmental assessment laws").¹³³ The Ghanaian Environmental Protection Agency (EPA), Ghana's primary environmental regulatory body, administer the laws.¹³⁴

EPA lawyers posit that under the Ghanaian environmental assessment laws, the Government is required to undertake SEA of government plans and programs¹³⁵ that are likely to adversely affect the environment or public health.¹³⁶ Some commentators disagree and hold that SEA is a voluntary process. They highlight that the Ghanaian environmental assessment laws do not provide specific guidance on what types of government actions should trigger the performance of an SEA, or establish specific procedures for conducting SEAs.¹³⁷ In any case, EPA has an SEA department, has developed nonbinding SEA guidelines and procedures,¹³⁸ and considers it best practice to conduct SEAs to analyze and assist with the development of government extractive industry plans.¹³⁹ For example, in 2012, the EPA, in collaboration with the Ministry of Energy of Ghana, the National Development Planning Commission of Ghana, and European development

133. Act 490, Environmental Protection Act (1994); L.I. 1652, Environmental Assessment Regulations (1999).

134. *Supra* note 133.

135. "Generally, policy is understood to be an overall directive which outlines, guides or sets a context for the proposed action(s) a government or organization intends to take. It may take the form of a law, document, statement or precedent. Typically, policy is implemented by plans and programmes, which set out actions, options and measures to be carried out in a sector or area." Environmental Impact Assessment & Strategic Environmental Assessment, *supra* note 51, pp. 86–87.

136. Anonymous Ghanaian EPA Attorney, Written Response to Author Inquiry (Mar. 2019); Ghana EPA, Strategic Environmental Assessment (SEA) of the Oil and Gas Sector (2013), <http://epaoilandgas.org/wp-content/uploads/2016/12/New%20folder/Executive%20Summary.pdf>; see also Staff, "Residents Around Voltaian Basin Assured of Comprehensive Environmental Policies," Reporting Oil & Gas (Jun. 29, 2016), <http://www.reportingoilandgas.org/residents-around-voltaian-basin-assured-of-comprehensive-environmental-policies/>; S. Doolan & Peter Nelson, OECD, Ghana: Strategic Environmental Assessment and its evolution, in Strategic Environmental Assessment in Development Practice (2012).

137. TaylorCrabbe Initiative, Report on Review of the Legal Framework for Agriculture, Environmental Assessment and Protected Areas in Ghana, p. 104 (Aug. 2018), <https://www.ghanawildlifesociety.org/wp-content/uploads/2015/12/GWS-RSPB-Final-Narrative-Report-from-TCi.pdf>; EPA, Preparation of an Implementation Framework for Operationalizing SEA Practice in Ghana, p. 21.

138. Whether SEA is mandatory under the Ghana's environmental assessment laws is a point of debate. "Preparation of an Implementation Framework for Operationalizing SEA Practice in Ghana," *supra* note 137.

139. TaylorCrabbe, *supra* note 135, p. 104; Purwins, *supra* note, 74.

agencies, performed an SEA of Ghana’s oil and gas sector for the purpose of guiding the entire sector in terms of policy, legal framework, and public engagement.¹⁴⁰

Conducting SEAs during the conceptual stage of extractive industry plans also furthers Ghana’s National Environmental Action Plan (NEAP), which provides that the primary objectives of Ghana’s environmental assessment regime is “to integrate environmental management and economic decisions at the earliest stages of planning an undertaking, programme or investment,” and “to provide avenues for the involvement of stakeholders—public, proponents, civil society, private sector and government agencies in the process.”¹⁴¹ The NEAP also expresses that “[t]he fundamental principle underlying ... [Ghana’s environmental assessment] system is the ‘preventive approach’ in which [environmental assessment] is applied as a tool to proactively minimise the environmental impacts of proposed undertakings.”¹⁴²

Yet, in terms of the planned aluminum industry developments, the Government and GIADEC have moved forward with the implementation of the Integrated Aluminum Industry Plan without conducting an SEA—and thus, without a comprehensive understanding of the environmental and social risks associated with the core components of the plan (bauxite mining, alumina refining, and aluminum smelting). They have identified mining sites and GIADEC is close to forming joint ventures with investors to develop those sites.

In pursuing these actions, the Government has acted counter to EPA precedent and Ghana’s NEAP. A senior EPA official explained in March 2019 that, based on EPA precedent, an SEA of planned aluminum industry projects should be conducted, and that he was surprised that EPA had not already initiated an SEA.¹⁴³ It is best practice to begin SEA “as early as practicable in the process of policy or plan formulation,” as the purpose of SEA is to inform and “improve, rather than just analyse, the policy, plan or programme,” before it is set in stone.¹⁴⁴ Thus, it would have been optimal to initiate an SEA of the Government’s plan to develop an integrated aluminum industry as early as 2017. Although it is not clear what the status of the Integrated Aluminum Industry Plan was at that time, President Nana Akufo-Addo and his Cabinet had expressed to Parliament that developing the industry was a Government priority, the Ministry of Finance had identified the types of projects that would be required to advance the industry, and the Government had reviewed several studies undertaken during previous presidential administrations on the economic feasibility of developing certain aluminum industry projects.¹⁴⁵

By undertaking an SEA early on—especially before drawing upon the Sinohydro Agreement loans that fostered the rapid development of aluminum industry projects—the Government could have identified a mix of aluminum industry projects that would maximize economic benefits while minimizing adverse social and environmental impacts. For instance, information and data collected and analyzed during the SEA process could have helped the Government site

140. TaylorCrabbe, *supra* note 135, p. 104; Netherlands Commission for Environmental Assessment, *supra* note 18.

141. Preparation of an Implementation Framework for Operationalizing SEA Practice in Ghana, *supra* note 137, pp. 13–14; Ghana Environmental Protection Council, Ghana Environmental Action Plan (Vol. 1), <http://documents.worldbank.org/curated/en/278211468751766859/pdf/multi-page.pdf>.

142. *Supra* note 141.

143. Anonymous senior EPA official interviewed by author (Mar. 2019).

144. Environmental Impact Assessment & Strategic Environmental Assessment, *supra* note 51, p. 102.

145. The Budget Statement and Economic Policy for the 2017 Financial Year, *supra* note 60, pp. 151–52; see also Terrence Neal, “Strategic Environmental Assessment and the Sustainable Development of a Ghanaian Integrated Aluminum Industry,” *Harvard Africa Policy J.* (Aug. 19, 2019), <https://apj.hkspublications.org/ghanabauxite/>.

projects at a safe distance from highly sensitive environmental areas and vulnerable communities and develop environmental performance standards to minimize the environmental and health impacts of planned projects. The SEA could have also informed the Government's negotiation of the Sinohydro Agreement, and ensured that the Government negotiated a grace period, loan term, and loan amount that would comport with the sustainable development of Ghana's aluminum industry. Instead, the Government has developed an aluminum industry plan that is not informed by environmental considerations, which is evidenced by the Government's plans to mine for bauxite in environmentally sensitive forest reserves, as explained in the following section.

The Government and GIADEC Plan to Site Bauxite Mines in Environmentally Sensitive Forest Reserves

A "healthy natural environment and the services it provides are fundamental to economic growth and human well-being."¹⁴⁶ Nevertheless, without conducting an SEA, GIADEC, with the support of the President, plans to mine bauxite in and around environmentally sensitive forest reserves and peasant-farmer communities that rely heavily on forest products and services to meet their day-to-day needs.¹⁴⁷ The Government is on track to issue permits for bauxite mining in the Atewa Forest Reserve, which is home to over 2,365 plant and animal species and already threatened by illegal gold mining.¹⁴⁸ In addition, the reserve contains three quarters of the remaining upland evergreen forest in Ghana, as well as the headwaters of three rivers that provide drinking water to approximately five million people.¹⁴⁹ Local communities also depend on the forest and the ecosystem services that it provides for food, raw materials, and firewood.¹⁵⁰

Professor Alfred Apau Oteng-Yeboah, a plant and environmental biology expert at the University of Ghana, notes that the Atewa Forest Reserve is globally unique and important natural resource for the local communities. He warns that if the Government allows GIADEC to clear portions of the forest for bauxite mining, Atewa Forest's unique biodiversity will be lost forever and conditions for local communities will dramatically deteriorate and exacerbate poverty.¹⁵¹ In addition, a chief officer of the Ghanaian Water Resources Commission (the government agency responsible for the management of Ghana's water resources) has stated that bauxite mining in the forest would negatively impact the country's drinking water supply.¹⁵²

To protect the Atewa Forest Reserve, the International Union for Conservation of Nature and Natural Resources, an international union composed of both government and civil society

146. OECD, *Greening Development: Enhancing Capacity for Environmental Management and Governance*, p. 13 (2012).

147. Amadu K. Sanah, "GIADEC Not Conforming to National and International Transparency and Environmental Standards," *Modern Ghana* (Oct. 22, 2020), <https://www.modernghana.com/news/1037501/giadec-not-conforming-to-national-and-international.html>; Nosmot Gbadamosi, "Ghana's Bauxite Boom," *supra* note 90; see generally Purwins, *supra* note 74.

148. In March 2020, the Deputy Minister for Lands and Natural Resources stated that the Government planned to mine twelve percent of the forest. Staff, "Government to mine 12% of Atewa forest – Deputy Minister," *GhanaWeb* (Mar. 3, 2020), <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Government-to-mine-12-of-Atewa-forest-Deputy-Minister-883600>; Nosmot Gbadamosi, "Ghana high court considers NGO case against bauxite mine," *supra* note 91; see also Intergovernmental Sciences-Policy Platform on Biodiversity and Ecosystem Services, *Biodiversity and Ecosystem Services For Africa*, p. 10 (2018), https://www.ipbes.net/sites/default/files/spm_africa_2018_digital.pdf.

149. Professor Alfred Apau Oteng-Yeboah, *supra* note 119; IUCN, *supra* note 119, pp. 19, 42.

150. IUCN, *supra* note 119, pp. 17, 36; A Rocha Ghana, "The Biodiversity of Atewa Forest Research Report," p. 15 (Jan. 2019).

151. Professor Alfred Apau Oteng-Yeboah, "Sacrificing Atewa Forest in China bauxite deal not acceptable," *GhanaWeb* (Jan. 24, 2019), <https://www.ghanaweb.com/GhanaHomePage/business/Sacrificing-Atewa-Forest-in-China-bauxite-deal-not-acceptable-Prof-Oteng-Yeboah-717813>; Professor Alfred Apau Oteng-Yeboah, *supra* note 119.

152. Stacey Knott, "Mining Ghana's bauxite would bring in billions from China. But it could also taint the water for 5 million

organizations, passed a resolution calling on Ghana to prohibit mining in the Atewa Forest and on private companies and investors to not support efforts to mine the forest.¹⁵³ A coalition of NGOs and civil society organizations have organized protests and brought a suit against the Government in a Ghanaian court to prohibit bauxite mining in the Atewa Forest Reserve.¹⁵⁴ The United States Government, environmental activists such as Leonardo di Caprio, and international and national non-governmental organizations have also urged the Government to undertake an SEA to develop a better understanding of the potential impacts of proposed aluminum industry projects on the Atewa Forest Reserve.¹⁵⁵

However, the Government has remained undeterred. It has allowed GIADEC to cut down trees in the Atewa Forest Reserve to make way for mining access roads and deep holes have been drilled in the forest to analyze the underlying bauxite deposits.¹⁵⁶ In October 2020, President Nana Akufo-Addo issued a press statement indicating that plans to exploit bauxite in the Atewa Forest Reserve are far advanced.¹⁵⁷

The Government also intends to issue permits and licenses for bauxite mining in the Tano-Offin Forest Reserve, where Ghana's largest bauxite deposit is located. The Government and GIADEC have conducted drilling to verify the mineral resource there and begun developing mining infrastructure in the reserve. Similar to the Atewa Forest Reserve, the Tano-Offin Forest Reserve is home to rare plant and bird species, contains tracts of upland evergreen forest, and is the headwaters of the Tano and Offin rivers that provide water for human consumption and agricultural activities.¹⁵⁸ Because no SEA has been undertaken, the impact of bauxite mining in Tano-Offin is uncertain. Some NGOs estimate that mining bauxite in the Offin Forest Reserve may not be as detrimental as mining in the Atewa Forest Reserve,¹⁵⁹ given that prior logging, mining, and farming have already destroyed and degraded a significant portion of the Tano-Offin Forest Reserve's old growth forest.¹⁶⁰ However, the risks of mining for bauxite in this area may be significant, especially to the peasant-farmer settlements inside of the reserve.¹⁶¹ The area

people." The Washington Post (Oct. 28, 2019), https://www.washingtonpost.com/world/africa/mining-ghanas-bauxite-would-bring-in-billions-from-china-but-it-could-also-taint-the-water-for-5-million-people/2019/10/25/e4726518-e3a7-11e9-b0a6-3d03721b85ef_story.html.

153. Staff, "IUCN passes resolution to stop bauxite mining in Atewa Forest," GhanaWeb (Nov. 15, 2020), <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/IUCN-passes-resolution-to-stop-bauxite-mining-in-Atewa-Forest-1109305>.

154. Staff, "A Rocha Ghana, 20 CSOs sue Ghana govt over Atewa bauxite mining," GhanaWeb (Jan. 15, 2020), <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/A-Rocha-Ghana-20-CSOs-sue-Ghana-govt-over-Atewa-bauxite-mining-838636>; Staff, "Bauxite Mining In Watershed Serving 5million People In The National Interest - AG Dismisses Case," Peace FM (Sept. 22, 2020), <https://www.peacefmonline.com/pages/local/news/202009/427825.php>.

155. U.S. Forest Service, "Technical Consultation on Proposed Bauxite Mining in the Atewa Forest Reserve: 25–29 March 2019," p. 2 (May 1, 2019), https://citinewsroom.com/wp-content/uploads/2019/05/Final-USFS-Atewa-technical-mission_summary-report-1.pdf; A Rocha Ghana, "Prioritise Protection Of Atewa Forest – Actor Leonardo DiCaprio" (Nov. 14, 2019), <https://ghana.arocha.org/news/prioritise-protection-of-atewa-forest-actor-leonardo-dicaprio/>.

156. *Supra* note 155.

157. Staff, "Plans far advanced to exploit Atewa bauxite - Akufo-Addo," GhanaWeb (Oct. 5, 2020), <https://www.ghanaweb.com/GhanaHomePage/business/Plans-far-advanced-to-exploit-Atewa-bauxite-Akufo-Addo-1077673>.

158. Mercy Derkyi et al., "Emerging forest regimes and livelihoods in the Tano Offin Forest Reserve, Ghana: Implications for social safeguards," *Forest Policy & Economics* (Jul. 2015).

159. Landscape News, *supra* note 124; Debanjali Sengupta, "Nyinahin residents show resentment over Ghana Government's plans to mine bauxite," AlCircle (Jun. 5, 2019), <https://www.alcircle.com/news/nyinahin-residents-show-resentment-over-ghana-governments-plans-to-mine-bauxite-46103>.

160. Awudu Salami Sulemana Yoda, "'We have cut them all': Ghana struggles to protect its last old-growth forests," Mongabay (Aug. 2019), <https://news.mongabay.com/2019/08/we-have-cut-them-all-ghana-struggles-to-protect-its-last-old-growth-forests/>; Nosmot Gbadamosi, "Ghana's Bauxite Boom," *supra* note 90.

161. *Supra* note 160.

experiences relatively high rainfall, which means that the further removal of vegetation would make the area more prone to erosion and flash flooding; this, in turn, would increase the risk of mining waste being washed into local streams and rivers.¹⁶² Additionally, some residents of the forest worry that clearing the forest for mining may lead to acute water shortages.¹⁶³

In summary, the Government has already allowed the initial development of bauxite mining in sensitive areas that contain globally significant biodiversity, support the livelihoods and healthy living conditions of local communities, and protect and purify water reservoirs upon which the country depends. Without conducting an SEA prior to this authorization, it is impossible to know whether and how these areas could be mined safely and sustainably without jeopardizing Ghana's natural heritage and sustainable development.

Figure 4. Billboard Advocating for the Prohibition of Bauxite Mining in Atewa Forest Reserve¹⁶⁴



The Government and GIADEC Have Not Provided Comprehensive Transparency

Comprehensive transparency—i.e., the provision of and grant of public access to information regarding decisions to extract resources, the grant of licenses and permits, and the collection and management of resource revenues—is fundamental to the sustainable governance of extractive

162. Mercy Derkyi et al., *supra* note 158.

163. Awudu Salami Sulemana Yoda, *supra* note 160; Tropenbos International Ghana, “Civil Society Organisations decry the mining of Tano Offin Forest Reserve in Ghana,” <https://www.tropenbos.org/news/civil+society+organisations+decry+the+mining+of+tano+offin+forest+reserve+in+ghana>.

164. “Why Ghana’s Attorney-General Is Urging A High Court to Dismiss China-Backed Bauxite Case,” Africans on China (Oct. 6, 2020), <https://africansonchina.com/why-ghanas-attorney-general-is-urging-a-high-court-to-dismiss-china-backed-bauxite-case/>.

industry projects.¹⁶⁵ Transparency “increases policy efficiency, reduces opportunities for self-dealing and diversion of revenues for personal gain, raise the level of public trust and reduce the risk of social conflict.”¹⁶⁶ In addition, “[a]n informed and engaged public can hold the government to account, [and] also help ensure that complex, large-scale projects meet government standards for environmental and social protection as well as revenue generation.”¹⁶⁷

With respect to the Integrated Aluminum Industry Plan, the Government and GIADEC have shared limited and, at times, conflicting information. Notably, the Integrated Aluminum Industry Plan is not widely available for public review. Most information on the plan has been uncovered from Ministry of Finance reports to Parliament and GIADEC and government press statements.¹⁶⁸ However, the government’s press statements have not always been reliable. For example, in August 2017, the Vice President indicated bauxite would be mined in the Atewa Forest Reserve, in spite of the Senior Minister Yaw Osafo-Mafo reporting one month earlier that mining was unlikely to take place there and that the Government would prioritize mining at another location.¹⁶⁹ As a result, NGOs and members of communities bordering the Atewa Forest Reserve had to urge the Government to clarify whether bauxite mining would take place in the forest.¹⁷⁰ The present understanding is that GIADEC will indeed mine bauxite in the forest.

In addition, although GIADEC has held discussions in communities likely to be affected by bauxite mining (“impacted communities”) and at least one press conference concerning planned bauxite mining projects, GIADEC’s engagements with the public have been inadequate.¹⁷¹ First, GIADEC offered broad assurances to journalists and traditional leaders of impacted communities (e.g., village chiefs)¹⁷² that bauxite mining will create many jobs and have minimal environmental impacts.¹⁷³ However, neither GIADEC nor the Government has systematically examined

165. Transparency & Accountability Initiative, Extractives Industries, <http://www.transparency-initiative.org/archive/wp-content/uploads/2011/09/8-Extractive-industries1.pdf>.

166. *Id.*

167. *Id.*

168. The Budget Statement and Economic Policy of the Government of Ghana for the 2017 Financial Year, *supra* note 60, ¶ 880; The Budget Statement and Economic Policy of the Government of Ghana for the 2020 Financial Year, *supra* note 89, pp. 138–39; The World News, *supra* note 102; Staff, “Ghana anticipated US\$100 billion boost to economy from aluminum trade,” GhanaWeb (Aug. 31, 2020), www.ghanaweb.com/GhanaHomePage/business/Ghana-anticipates-US-10-billion-boost-to-economy-from-aluminum-trade-1046728.

169. The Budget Statement and Economic Policy of the Government of Ghana for the 2019 Financial Year, *supra* note 73, p. 148; Staff, “NGOs make moves to stop bauxite mining in Atiwa Forest,” Citi 97.3 FM (Jul. 5, 2017), <http://citifmonline.com/2017/07/ngos-make-moves-to-stop-bauxite-mining-in-atiwa-forest/>; Abu Mubarik, “Senior minister: bauxite mining won’t affect Atiwa forest, Brim river,” *Pulse.com*, (Jul. 1, 2017), <http://archive.is/wXc7Z>; Christiaan Triebert, “Ghana’s Atewa Forest: Monitoring Mining Which May Threaten Water Sources,” *Bellingcat* (Aug. 14, 2017), <https://www.bellingcat.com/news/africa/2017/08/14/mining-in-the-atewa-forest/>.

170. “NGOs make moves to stop bauxite mining in Atiwa Forest,” *supra* note 169; see also Nosmot Gbadamosi, “Ghana’s Bauxite Boom,” *supra* note 90.

171. Awudu Salami Sulemana Yoda, “Ghana’s government faces pushback in bid to mine biodiversity haven for bauxite,” *Mongabay* (Feb. 5, 2020), <https://news.mongabay.com/2020/02/ghanas-government-faces-pushback-in-bid-to-mine-biodiversity-haven-for-bauxite/>.

172. “The main functions of chiefs include dispute settlement; codification of customary law; organization of rituals, ceremonies and festivals; custody of stool land; organization of communal labour; and promotion of socioeconomic development.” Purwins, *supra* note 74.

173. According to the NGO A Rocha Ghana, “GIADEC’s community consultations have only included elite individuals and handpicked groups in violation of community rights.” GIADEC not conforming to transparency and environmental standards, B&FT Online (Oct. 22, 2020), <https://thebftonline.com/22/10/2020/giadece-not-conforming-to-national-and-international-transparency-and-environmental-standards/>; see also Rupankar Majumder, “Ghana’s Atewa Chiefs laud Bauxite Mining in Atewa Forest,” *AlCircle* (Jan. 24, 2020), <https://www.alcircle.com/news/ghanas-atewa-chiefs-laud-bauxite-mining-in-atewa-forest/>.

the potential social or environmental impacts of the planned aluminum industry projects, which means that GIADEC may be providing the public inaccurate assurances or half-truths. Traditional leaders have also expressed concerns over the veracity of GIADEC's economic benefit claims. In January 2020, a group of traditional leaders from communities around the Tano-Offin Forest Reserve expressed that "GIADEC's plans and actions to mine bauxite in our area have been full of deceits and misleading," and that their interactions with GIADEC had given them doubts as to whether planned projects will benefit their communities.¹⁷⁴ That same month, the group of traditional leaders requested that the government halt proposed mining operations due to their belief that GIADEC had insufficiently consulted them.¹⁷⁵ Second, reports suggest that GIADEC's meetings with communities have restricted participation to certain members of society. While the Government and GIADEC has commonly included traditional leaders in meetings, they have not consistently engaged with ordinary community members, particularly those opposed to GIADEC's planned projects. For example, in late 2019, residents of the Tano-Offin Forest Reserve reported that "the government ... shut them out of discussions about the area's future but also alerted them that they may need to relocate."¹⁷⁶ Some community members have also noted that in the meetings they were able to attend, GIADEC did not allow them to ask questions or voice their concerns.

In October 2020, GIADEC inaugurated several committees in impacted communities.¹⁷⁷ The stated purpose of these committees is to help address information sharing and consultation deficiencies, but it is unclear what impact these committees have had or will have.¹⁷⁸

Transparency has been similarly lacking with respect to the Sinohydro Agreement. On July 19, 2018, the Minister for Finance conveyed to Parliament that a "barter agreement, which aims to open up a new financing model for Ghana in undertaking future projects, ha[d] been reached with Sinohydro Group Limited of China, to provide US\$2 billion of infrastructure ... in exchange for Ghana's refined bauxite."¹⁷⁹ Although Parliament would soon after approve the agreement the final week of July 2018,¹⁸⁰ the minister's communication to Parliament marked the first time that the general public was provided details on the Sinohydro Agreement.¹⁸¹ Prior the approval of the Sinohydro Agreement, the Government did not make a draft of the Sinohydro Agreement widely available for public review. Even senior officials at EPA and the Minerals Commission, which is

forest-50916.

174. "Nyinahin Bauxite: Chiefs threaten demo; give govt 10 days ultimatum to change name," GhanaWeb (Jan. 9, 2020), <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Nyinahin-Bauxite-Chiefs-threaten-demo-give-govt-10-days-ultimatum-to-change-name-833557>.

175. *Id.*; Staff, "Mining of Bauxite In Nyinahini Forest In Limbo As Group Fight Government," Peace FM (Jan. 28, 2020); see also Clement Akoloh, "Nyinahin Gods Reject Libation over Bauxite Mining, Youth Want Asantehene Help," Modern Ghana (May 31, 2019), <https://www.modernghana.com/news/936144/nyinahin-gods-reject-libation-over-bauxite-mining.html>.

176. Nosmot Gbadamosi, "Ghana's Bauxite Boom," *supra* note 90.

177. Eric Joe Ayivi, "Ghana Integrated Aluminium Development Corporation Sets Up Committees To Deepen Community Partnership," Modern Ghana (Oct. 11, 2020), <https://www.modernghana.com/news/1035043/ghana-integrated-aluminium-development-corporation.html>.

178. *Id.*

179. Mid-Year Fiscal Policy Review of the 2018 Budget Statement and Economic Policy, *supra* note 9, p. 40.

180. Staff, "Ghana Parliament approves \$2b Master Project Support Agreement with China," Ghana Business News (Jul. 29, 2018), <https://www.ghanabusinessnews.com/2018/07/29/ghana-parliament-approves-2b-master-project-support-agreement-with-china/>; see also Joint Memorandum to Parliament by The Honorable Minister for Finance and The Honorable Minister for Roads and Highways for the Approval of Commercial Agreements between the Government of Ghana and Sinohydro Corporation Limited (Jul. 2018).

181. Concerned Citizens of the Atewa Landscape, interviewed by author (Mar. 2019).

the branch of the government responsible for issuing mining licenses, reported that they were not briefed or provided details on the agreement before the Government signed it.¹⁸² This is all consistent with the findings of the Natural Resource Governance Institute that “[t]ransparency is lacking in all stages of [resource-backed loan] deals.”¹⁸³

Looking to the Future: Ghana’s EIA Process

Although the Government’s actions suggest that it will not perform an SEA of the Integrated Aluminum Industry Plan, GIADEC intends to perform EIAs of each of the planned aluminum industry projects in coordination with its joint venture partners. Additionally, under Ghana’s environmental assessment laws, GIADEC is expressly required to perform EIAs before commencing planned aluminum industry projects.¹⁸⁴ This Part examines Ghana’s EIA procedures and explains why EIAs of the Integrated Aluminum Industry Project will be susceptible to pro-development biases.

Overview of Ghana’s EIA Procedures

Under the Ghanaian environmental assessment laws, government and private entities cannot commence any project likely to have significant impacts on the environment or public health without applying for and receiving an environmental permit from EPA.¹⁸⁵ In addition, EPA may not issue environmental permits for certain types of projects, such as mining, rail, road, and smelting projects and projects that alter hill forest land, until the project developer/investor has undertaken an EIA and submitted a report (“environmental impact statement”) documenting the findings of the EIA to EPA for review.¹⁸⁶

The overall objective of Ghana’s EIA requirement is constructive: when conducting an EIA, the developer must examine its proposed project’s potential effects on environmental and socioeconomic conditions (from the project’s commencement to the project’s completion).¹⁸⁷ If potential adverse impacts are identified, developers must identify measures to mitigate and manage those impacts.¹⁸⁸ Ideally, EPA will not permit developers to undertake projects that pose severe environmental and social risks or risks deemed unacceptable by the public.

As for the specific mandatory EIA procedures, there are many positive aspects. To guide developers’ analysis, the Ghanaian environmental assessment laws set out minimum EIA terms of reference.¹⁸⁹ Before commencing an EIA, developers must notify the public of their project

182. Anonymous senior EPA official, interviewed by author (Mar. 2019); Anonymous senior Mineral Commission official, interviewed by author (Mar. 2019).

183. Resource-Backed Loans: Pitfalls and Potential, *supra* note 7, p. 19.

184. L.I. 1652.

185. L.I. 1652; TaylorCrabbe, *supra* note 135, p. 37.

186. L.I. 1652.

187. L.I. 1652.

188. L.I. 1652.

189. The Environmental Assessment Regulations state that the “[t]he terms of reference should include (a) a description of the undertaking; (b) an analysis of the need for the undertaking; (c) alternatives to the undertaking including alternative situations where the undertaking is not proceeded with; (d) matters on site selection including a statement of the reasons for the choice of the proposed site and whether any other alternative site was considered; (e) an identification of existing environmental conditions including social, economic and other aspects of major environmental concern; (f) information on potential, positive and negative impacts of the proposed undertaking from the environmental, social, economic and cultural aspect in relation to the different phases of development of the undertaking; (g) the potential impact on the health of people; (h) proposals to mitigate any potential negative socio-economic, cultural, and public health impacts on the environment ...” L.I. 1652.

plans and publicly post information on the intended scope of their EIAs.¹⁹⁰ During the EIA process, developers are obligated to consult with the communities likely to be impacted by their projects.¹⁹¹ Additionally, upon receipt of a developer's draft environmental impact statement, EPA is required to issue a public notice and post relevant parts of the draft environmental impact statement for public review.¹⁹² EPA must also hold a public hearing before deciding whether to issue an environmental permit for projects that will require the dislocation of persons, for projects that could have "extensive and far reaching" impacts on the environment, and for projects that cause a "great adverse public reaction."¹⁹³ Once a developer and EPA have satisfied the EIA procedures prescribed in the Ghanaian environmental assessment laws, there are cross-sectoral technical committees to assist EPA in its review of the environmental impact statement.¹⁹⁴

Nevertheless, there are a range of attributes that can undermine the effectiveness of the EIA procedures in practice. As discussed above, EIAs are limited in comparison to SEAs because they are performed in a predetermined policy environment where, for example, decisions to exploit resources have already been formalized in government policies or plans. In addition, the Ghanaian environmental assessment laws do not expressly require developers to evaluate important factors, such as a project's potential biodiversity and climate change impacts.¹⁹⁵ Thus, critical adverse impacts may not be examined or reported in developers' environmental impact statements. Moreover, the laws provide EPA relatively broad discretion in applying certain public participation and transparency-related procedures, which means that robust public engagement and information sharing is not guaranteed. For example, EPA is not required to make copies of environmental impact statements available in digital formats, which significantly limits public access to the documents;¹⁹⁶ it is left to EPA to decide on a case-by-case basis what constitutes a "great adverse public reaction;" and there is no minimum notice period for hearings.¹⁹⁷

Discretion is also an issue at the final stage of the EIA process when EPA decides whether to approve a developer's environmental impact statement and whether to issue an environmental permit. The Ghanaian environmental assessment laws do not provide express criteria upon which EPA should base its decisions, providing EPA broad discretion to issue permits.¹⁹⁸ Even where an environmental impact statement shows that a project is likely to have serious adverse environmental impacts, EPA has the authority to approve the project.

The high-level of discretion granted to EPA can be particularly detrimental in the issuance of environmental permits for mining projects. It is not unusual for the Government to grant mining rights to developers before the EIA process has been completed because Ghanaian law only requires developers to acquire an environmental permit before they commence work on their proposed projects.¹⁹⁹ In such cases, EPA is less likely to decline to issue environmental permits to developers because the Government's grant of licenses or mineral rights is often an express

190. L.I. 1652.

191. L.I. 1652.

192. L.I. 1652.

193. L.I. 1652.

194. TaylorCrabbe, *supra* note 135, p. 105.

195. TaylorCrabbe, *supra* note 135, pp. 108, 113, 119–20.

196. TaylorCrabbe, *supra* note 135, p. 21.

197. TaylorCrabbe, *supra* note 135, p. 21.

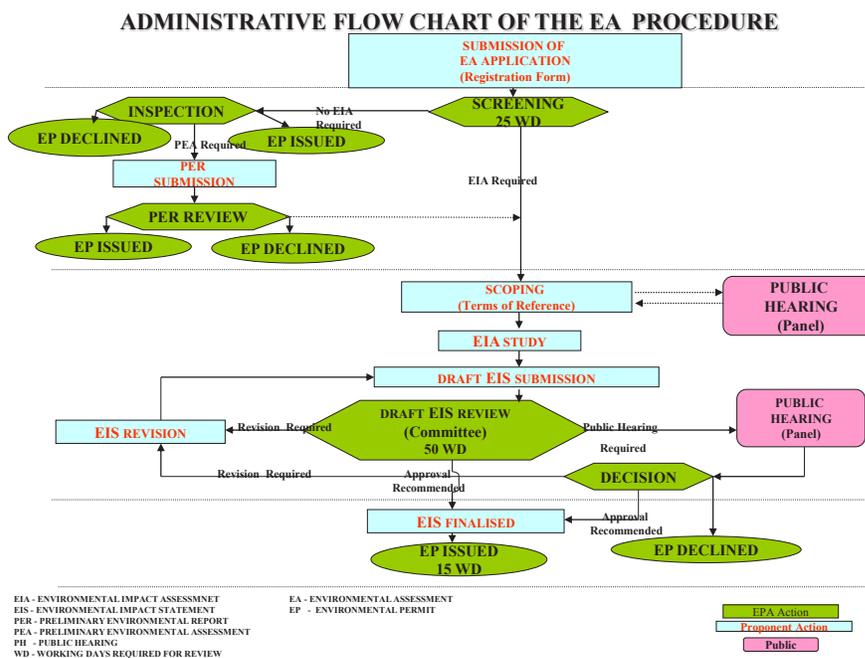
198. TaylorCrabbe, *supra* note 135, pp. 119–20.

199. TaylorCrabbe, *supra* note 135, p. 121.

governmental endorsement of developers' projects. This, in turn, reduces developers' incentive to perform comprehensive assessments in accord with best practice.

Finally, EPA's decision-making is influenced by presidential political interests and economic and development policies. The President, as head of government and head of state, is politically and institutionally powerful. He has the legal authority to appoint and terminate members of EPA's board of directors (the "Governing Board") and the EPA Executive Director, who manages EPA's day-to-day operations and implements Governing Board directives.²⁰⁰ This authority thus provides the President leverage over EPA's application of the EIA procedures and environmental permitting decisions. The vice president of the IMANI Center for Policy & Education Africa has expressed that EPA has "the expertise and competent people to do an excellent job as well as the legal regime to back them, if they decide to do the job and if they are allowed to do their job without any interference."²⁰¹

Figure 5. Ghana's EIA Procedures²⁰²



The Impact of EPA's Broad Discretion on the Viability of the Integrated Aluminum Industry Plan

EPA is likely to use its discretion to approve/grant environmental permits for all Integrated Aluminum Industry Plan projects because developing the industry has become a governmental

200. Act 490; TaylorCrabbe, *supra* note 135, p. 37.

201. Staff, "Ghana: EPA Boss okays decision to mine bauxite in Atiwa forest reserve, downplays importance of environmental impact assessment," Africa News Radio (Mar. 19, 2019), <http://africanewsradio.com/ghana-epa-boss-okays-decision-to-mine-bauxite-in-atiwa-forest-reserve-downplays-importance-of-environmental-impact-assessment/>.

202. Ghana EPA, Regulations, <http://www.epa.gov.gh/epa/regulations>.

priority. The President repeatedly promised in his campaigns for office and official Government statements that GIADEC will exploit Ghana's bauxite reserves to create job opportunities and expand economic growth.²⁰³ In December 2020, he stated that "[t]he Ghana Integrated Bauxite and Aluminium Development Authority will soon be complete for the mining of the bauxite, out of which an industrial revolution would emerge to bring money, jobs and development to [the Tano-Offin Forest Reserve communities]."²⁰⁴ Similarly, in October 2020, he stated that "[i]t is time to mine the bauxite here and plans are far advanced for us to mine the bauxite so that the people of Kyebi and Ghanaians, in general, would have employment which would generate income for them."²⁰⁵ The President likely wants to fulfill his promises because many of the alleged economic benefits would flow to his home region, where the bauxite deposits in the Atewa Forest Reserve are located.²⁰⁶ Moreover, President Nana Akufo-Addo is under pressure to quickly develop planned projects because the grace period has begun to run on the disbursed Sinohydro Agreement loans, and it is not apparent that Ghana has alternative sources of income to satisfy its loan obligations.

With respect to the Integrated Aluminum Industry Plan, the President's influence on EPA operations has been clear. In March 2019, the Acting EPA Executive Director expressed that, since the President fully supports the development of the planned aluminum industry projects, EPA plans to approve/issue permits for proposed projects in the Atewa Forest Reserve.²⁰⁷ That same month, a senior EPA official expressed that EPA has not initiated an SEA of the Integrated Aluminum Industry Plan because the President has not directed them to.²⁰⁸ This suggests that the Government and GIADEC is not committed to using the SEA process or EIA process to steer development away from environmentally sensitive ecosystems. This could be a costly error because bauxite mining, even under the safest conditions, requires the clearing of forest plants and trees and the removal of topsoil, and undertaking such activity in sensitive areas, such as the Atewa Forest Reserve, could lead to severe and lasting environmental degradation.

CONCLUSION

By signing the Sinohydro Agreement, President Nana Akufo-Addo connected infrastructure financing to a pre-existing government plan to develop an integrated aluminum industry. In 2016, during his campaign for office, the president established that developing the industry would be a central pillar of his economic development policy. Subsequently in 2018, Ghana concluded

203. The Budget Statement and Economic Policy of the Government of Ghana for the 2019 Financial Year, *supra* note 73, p. 194; "Plans far advanced to exploit Atewa bauxite - Akufo-Addo," *supra* note 157; "I'll establish integrated aluminium industry," *supra* note 62; Akufo-Addo's 2019 State of the Nation Address (Full Statement), Graphic Online (Feb. 2019), <https://www.graphic.com.gh/news/politics/ghana-news-akufo-addo-s-2019-state-of-the-nation-address-full-statement.html>.

204. "'Ghana's bauxite will benefit every Ghanaians' - Akufo-Addo," Modern Ghana (Dec. 3, 2020), <https://www.modernghana.com/news/1047474/ghanas-bauxite-will-benefit-every-ghanaians.html>.

205. Staff, "Ghana's Bauxite Mining Plans Well Underway: President Akufo-Addo," Aluminum Insider (Jan. 26, 2021), <https://aluminiuminsider.com/ghanas-bauxite-mining-plans-well-underway-president-akufo-addo/>.

206. Daryl Bosu, *supra* note 128; "Plans far advanced to exploit Atewa bauxite - Akufo-Addo," *supra* note 157. The President has stated that projects will be carried out in an environmentally responsible fashion without any supporting evidence.

Staff, "Ghana's Bauxite Mining Plan Well Underway: President Akufo-Addo," Aluminum Insider (Oct. 7, 2020), <https://aluminiuminsider.com/ghanas-bauxite-mining-plans-well-underway-president-akufo-addo/>.

207. Africa News Radio, *supra* note 143. GIADEC claims that its mining plan for the Atewa Forest Reserve will be guided by an EIA. Staff, "GIADEC assures responsible mining of bauxite in Atewa Forest Reserve," GhanaWeb (Oct. 11, 2020), <https://www.ghanaweb.com/GhanaHomePage/business/GIADEC-assures-responsible-mining-of-bauxite-in-Atewa-Forest-Reserve-1081939>.

208. Anonymous senior EPA official interviewed by author (Mar. 2019).

the Sinohydro Agreement and pledged to satisfy its loan repayment and collateral obligations with income generated from aluminum industry projects. Although this pledge is not legally binding, the Government appears set on exploiting some magnitude of bauxite to satisfy its loan obligations. Indeed, the negative economic and fiscal impacts of the economic crisis caused by the COVID-19 pandemic and other factors suggest that Ghana does not have alternative income streams to fulfill its Sinohydro Agreement loan obligations. Thus, even though the Integrated Aluminum Industry Plan did not arise from the Sinohydro Agreement, the Sinohydro Agreement loans has bolstered the national prioritization of aluminum industry projects in Ghana. Specifically, the legally binding infrastructure loan terms, which include severe penalties for default, have added pressure on the Government and GIADEC to quickly develop bauxite mines and alumina refineries.

In addition, this case study has demonstrated that the proposed Integrate Aluminum Industry Plan projects pose significant environmental and social risks, that Ghana's environmental assessment laws are not adequately tailored to address these risks, and that the Government and GIADEC, thus far, have not facilitated comprehensive transparency with respect to the Integrated Aluminum Industry and the Sinohydro Agreement. Although best practice dictates that Ghana should have performed a strategic environmental assessment at the conceptual stages of the Integrated Aluminum Industry Plan and before the Government pledged to rely on revenues from its domestic aluminum industry to satisfy its infrastructure loan obligations, Ghana has not performed one. This can be partly attributed to ambiguous provisions of Ghana's environmental assessment laws that do not clearly state whether a strategic environmental assessment is required for government sectoral plans and fail to establish procedures for performing strategic environmental assessment.

In comparison, Ghana's environmental assessment laws expressly require developers of bauxite mines and alumina refineries, for example, to conduct environmental impact assessments and obtain environmental permits from EPA before commencing work on their projects. Nonetheless, EPA is likely to issue environmental permits for all planned projects because Ghanaian law provides EPA a high level of discretion in issuing environmental permits and EPA decision-making processes are influenced by presidential priorities and politics. In this case, the President and GIADEC have not prioritized risk avoidance. The President supports implementing the Integrated Aluminum Industry Plan and siting bauxite mines in and around environmentally sensitive forest reserves and vulnerable peasant-farmer communities. Additionally, due to the potential legal and fiscal implications of defaulting on the Sinohydro Agreement infrastructure loans, the President also appears in favor of quickly developing the aluminum industry projects, and rapid development will increase the likelihood of risks materializing. This is all unfolding despite President Nana Akufo-Addo and GIADEC's purported commitments to implementing the Integrated Aluminum Industry Plan in a manner consistent with international standards and sustainability principles.

In summation, Ghana's experience with the Sinohydro Agreement demonstrates that RFI agreements may cement and bolster natural resource production as a national policy priority, and thereby increase government prioritization of fiscal and economic factors to the detriment of national environmental protection and sustainability objectives.

RECOMMENDATIONS

The President of Ghana has declared that the Integrated Aluminum Industry Plan would be implemented in a manner consistent with international standards and sustainability principles but, as described in this study, the reality on the ground shows that this pledge is not being followed. Despite the impediments inherent in the RFI model, several reforms could be taken by the active parties—Ghanaian policy makers, prospective GIADEC joint venture partners, Sinohydro, and the Sinohydro Agreement infrastructure loan lenders—that could allow for the development of bauxite mining while also safeguarding the country’s biological heritage and promoting sustainable development.

Recommendations for Ghanaian Policy Makers

- Although renegotiating RFI agreements are difficult, the economic downturn caused by the COVID-19 pandemic could make Sinohydro and lenders more amenable to renegotiating or amending the Sinohydro Agreement loan terms and deferred payment agreements. Renegotiation could allow Ghana to lengthen loan grace periods and loan repayment periods to provide GIADEC more time to develop Ghana’s domestic aluminum industry sustainably. Ghana could also attempt to negotiate a more flexible payment schedule that depends on commodity revenue levels.
- The Ghanaian Parliament should not approve additional deferred payment agreements or EPC contracts until (a) the Government systematically examines the environmental and social risks of developing an integrated aluminum industry and linking such developments to infrastructure loans; and (b) EPA, in collaboration with GIADEC, holds public hearings in communities likely to be impacted by proposed Integrated Aluminum Industry Plan projects. Hearings should be accessible to all members of the public and NGO representatives and provide details on the likely environmental and social implications of the Integrated Aluminum Industry Plan. Halting the approval of the deferred payment agreements and EPC contracts in accordance with this recommendation would ensure that Ghana does not draw upon the full Sinohydro Agreement loan award before it has developed a clear understanding of the risks associated with its repayment strategy.
- The Minerals Commission should refrain from issuing licenses for proposed bauxite mines in the Atewa Forest Reserve at least until GIADEC and the Government have had an opportunity to reassess the merits of siting mines in the Atewa Forest based on an evaluation of scientific evidence and input from local communities.
- Parliament should revise the legislation that created GIADEC to require that GIADEC strive to comply with the Aluminum Stewardship Initiative Performance Standards, which are the premier voluntary industry standards for addressing sustainability issues in the aluminum value chain, and to regularly report to Parliament on efforts it is taking to that end. GIADEC should also be required to publicly disclose such information on its website.
- To provide EPA greater independence from political influence, Parliament should reform the EPA Governing Board membership and more clearly define the grounds upon which the President is authorized to terminate Governing Board directors. EPA autonomy would likely increase if a portion of the Governing Board seats were filled by representatives from civil society and minority/opposition political parties.

- Parliament should revise the legislation that created GIADEC to provide EPA representation on GIADEC's board.
- Parliament should enact new environmental assessment legislation or EPA should promulgate new regulations that explicitly require government ministries, agencies, and state-owned enterprises to undertake strategic environmental assessments when formulating industry or sectoral policies, plans, and programs. Ghana could leverage the expertise and resources of international institutions, such as the African Development Bank, to support the reform of its environmental assessment laws.
- Parliament should enact legislation that requires the Government to consider and publicly report on the implications of RFI agreement loan terms on domestic natural resource exploitation and national environmental and social policy/objectives before any loan funds are disbursed to cover the costs of infrastructure projects.

Recommendations for Sinohydro and the Sinohydro Agreement Lenders

- In order to ensure there is a “social license” to operate and to minimize the risk of social unrest or public dissent jeopardizing the repayment of the infrastructure loans, lenders should not approve the disbursement of the remaining tranche of loan funds until the Ghana demonstrates that it has studied the potential environmental and social impacts Integrated Aluminum Industry Plan and outlined a plan to address the potential impacts and the issues of highest concern to the public.
- To avoid reputational risks, Sinohydro and/or the infrastructure loan lenders should pressure Ghana to undertake an SEA of the Integrated Aluminum Industry Plan and offer to financially assist EPA in carrying out an SEA.

Recommendations for GIADEC Joint Venture Partners

- To avoid reputational risks and to uphold their duty to respect human rights, investors selected to form joint venture partnerships with GIADEC to develop the Integrated Aluminum Industry Plan projects should strive to adhere to international standards, such as the Aluminum Stewardship Initiative Performance Standards, International Aluminum Institute Sustainable Bauxite Mining Guidelines, as well as the United Nations Guidelines on Business and Human Rights.
- To promote their position as internationally competitive corporations adhering to Environmental, Social, and Corporate Governance standards, GIADEC joint venture partners should publicize their sustainability or human rights due diligence policies. This would also facilitate transparency and accountability.

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