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# UNLOCKING SCIENCE DIPLOMACY'S HIDDEN POWER: THE ROLE OF SCIENCE DIPLOMACY IN THE NEGOTIATION OVER THE ALPART REFINERY IN JAMAICA

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## **TRAZENDO A CIÊNCIA PARA A MESA DE NEGOCIAÇÃO: O PAPEL DA DIPLOMACIA CIENTÍFICA NA NEGOCIAÇÃO DA REFINARIA ALPART NA JAMAICA**

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**RESUMO:** Este artigo explora a relação entre Diplomacia Científica (DC) e negociações multilaterais, com um estudo de caso específico centrado na produção de alumínio na Jamaica. Ele

destaca o papel muitas vezes indireto, mas crucial, da DC na formação dos resultados de negociações relacionadas a questões energéticas e ambientais. Embora o conceito de DC nem sempre esteja diretamente na mesa de negociações, as práticas de DC atuam como uma ponte entre a comunidade científica e os formuladores de políticas. O estudo de caso analisa a influência da DC nas negociações relacionadas à produção de alumina na Jamaica, especificamente na venda da refinaria de alumina Alpart em 2016. Ele demonstra como a DC desviou as negociações de considerações puramente políticas e comerciais para discussões técnicas sobre impactos ambientais. A crise inicialmente girava em torno de uma usina de energia a carvão e acabou se estendendo à extração de bauxita, destacando o papel crítico da energia acessível na refinação de alumínio. Do ponto de vista metodológico, o estudo utiliza um quadro descritivo de estudo de caso, somado a conceitos de teoria das negociações, para explorar a dinâmica do impacto da DC nas barganhas. O poder de influência e os interesses dos principais atores, incluindo a JISCO (Jinquan Iron and Steel Company), o governo jamaicano e a Jamaica Environment Trust (JET), são dissecados. Em última análise, o artigo destaca a influência das práticas de DC nas negociações, desviando o foco para as preocupações ambientais e destacando a importância da tomada de decisões informadas em negociações internacionais. A JET desempenhou um papel fundamental ao iluminar os riscos ambientais e influenciar a redefinição das dinâmicas de poder nas negociações. Assim, este trabalho exemplifica como a DC pode remodelar negociações e promover soluções sustentáveis para desafios globais complexos.

Palavras-chave: Diplomacia Científica, Negociações Internacionais, Negociações Multilaterais, Política Externa, Assessoria Científica

## **UNLOCKING SCIENCE DIPLOMACY'S HIDDEN POWER: THE ROLE OF SCIENCE DIPLOMACY IN THE NEGOTIATION OVER THE ALPART REFINERY IN JAMAICA**

### **ABSTRACT:**

This article delves into the relationship between Science Diplomacy (SD) and multilateral negotiations, with a specific case study focusing on aluminum production in Jamaica. It highlights the often indirect yet pivotal role of SD in shaping the outcomes of negotiations concerning energy and environmental issues. Although the concept of SD is not always directly at the negotiation table, SD practices act as a bridge between the scientific community and policymakers. The case study analyzes the influence of SD on negotiations related to alumina production in Jamaica, specifically the sale of the Alpart alumina refinery in 2016. It demonstrates how SD diverted negotiations from solely political and commercial considerations to technical discussions on environmental impacts. The crisis initially centered around a coal-based power plant and eventually extended to bauxite extraction, revealing the critical role of affordable energy in aluminum refining. Methodologically, our research design follows the traditional guidelines of a descriptive case study. We employed concepts extracted from both the theory of negotiations and science diplomacy. Leverage power and interests of key actors, including JISCO (Jinquan Iron and Steel Company), the Jamaican government, and the Jamaica Environment Trust (JET), are dissected. Ultimately, it underscores the influence of SD practices on the negotiations, shifting the focus towards environmental concerns and highlighting the importance of informed decision-making in international negotiations. JET played a pivotal role by illuminating the environmental hazards and by influencing the redefinition of power dynamics in the negotiations. Thus, this work exemplifies how SD can reshape negotiations and foster sustainable solutions to complex global challenges.

**Keywords:** Science Diplomacy, International Negotiations, Multilateral Negotiations, Foreign Policy, Science Advise ment

## INTRODUCTION

In our interconnected world, global challenges demand global solutions. Environmental issues, transcending borders and impacting every corner of the globe, are a prime example of this. In the pursuit of effective solutions, the realms of science and diplomacy converge in what is known as Science Diplomacy (SD). This article explores the complex connection between Science Diplomacy and multilateral negotiations concerning energy issues through a case study, the aluminium production in Jamaica, shedding light on its occasionally indirect yet vital influence on the negotiation's final result.

Science diplomacy holds significant importance in multilateral negotiations, even when scientists are not directly seated at the negotiation table. It serves as a bridge between the scientific community and policymakers, providing evidence-based insights, solutions, and technical expertise to inform decision-makers. By facilitating the exchange of scientific knowledge, collaborative research, and cooperation on global challenges such as climate change, public health, and sustainable development, science diplomacy enhances the credibility and effectiveness of multilateral negotiations. It fosters trust, encourages data-driven decision-making, and helps build consensus among nations, ultimately contributing to more informed, equitable, and successful outcomes in complex international negotiations.

Science Diplomacy can impact the negotiation process in various ways. In this paper, we investigate how SD influenced the negotiations regarding alumina production in Jamaica. To do so, we merge negotiation theory with the SD literature to evaluate the crisis that emerged after the sale of the Alpart alumina refinery in 2016. This crisis revolved around a dispute initially involving a coal-based power plant and eventually extending to bauxite extraction. A surplus of affordable energy is crucial for the aluminium refining process, and Jamaica's deficiency in this resource has hindered its ability to fully transform bauxite resources into the final metal product across all production stages.

Our central argument is that core aspects of the practice of Science Diplomacy directly affected the negotiation in the case of Jamaica by diverting the central bargaining of the negotiations

from strategic political considerations to technical discussions regarding environmental impacts, even though agents involved in the case did not purposefully create an institutionalized SD framework.

Methodologically, our research design follows the traditional guidelines of a descriptive case study. Case studies are useful when the goal of the research is to explore the “hows” and “whys” of a phenomenon, particularly when facing relevant real-life, highly-contextualized data (Yin, 1989). Regarding the selection of this specific case, it fits into the category of a revelatory case within the single-case selection criteria mentioned by Yin (1989), since it offers the opportunity for real-life observation of core concepts found in the SD literature, more specifically the idea of science advisory and its impacts in public policy choice.

Through the analysis, we also make use of negotiation theory concepts in order to characterize the interaction of the agents. Within this framework, a bargain is a subprocess of a negotiation, in which the parties – or agents of the negotiation – balance their interests aiming at exchanging proposals “for the terms of an agreement on particular issues” (Gulliver, 1979, p. 71; Lewicki et al., 1992, p. 219). It involves an exchange between two or more agents by which each one gives up material/tangible or immaterial/intangible goods in exchange for something else. In a bargain, one party cannot achieve its interests entirely without prevailing over the interests of a counterpart (Manzur, 2017, p. 42).

This theoretical bargaining framework is essential for understanding the underlying dynamics of the Jamaica case, where various stakeholders engaged in crucial negotiations related to aluminum production. These negotiations involved not only strategic and political issues but also technical considerations related to environmental impacts. At the heart of this scenario was the need to ensure an adequate supply of affordable energy, a fundamental element in the aluminum refining process. Jamaica's shortage of accessible energy posed a significant challenge for the country in converting its bauxite resources into aluminum across all production stages.

In this context, the involved stakeholders had to balance their interests and seek solutions that met their individual needs. On one side was the Jinqan Iron and Steel Company (JISCO), whose economic interest lay in securing a stable supply of alumina, a critical resource for its aluminum production. On the other side, the Jamaican government was focused on stimulating economic growth and job creation, making the alumina sector a key component of its development

plan. Meanwhile, civil society organizations like the Jamaica Environment Trust (JET) and academics were concerned about the environmental and health impacts associated with a proposed coal plant. They played a crucial role by providing technical information and evidence regarding environmental risks.

In this complex context, the bargaining process among these stakeholders played a pivotal role in assessing and influencing the power dynamics, and in determining the outcome of the negotiations. Thus, the bargaining framework offers valuable insights into understanding the interaction observed in the Jamaica case, where the items under negotiation were fundamental to the future of alumina production and, consequently, the country's economy and environment.

## **SCIENCE DIPLOMACY AND INTERNATIONAL NEGOTIATIONS**

The concept of science diplomacy can be examined through two lenses. The approach is rooted in the French diplomatic tradition, blending elements of university policy, science policy, and language propagation. This approach views science as one among several instruments in a nation's cultural policy and its efforts to exert global influence. This perspective justifies science diplomacy as a component of soft power, akin to the international promotion of a nation's language or cinema (Ruffini, 2017, p. 15). The second conceptual perspective, in harmony with the Anglo-Saxon understanding of science diplomacy, distinguishes it from cultural diplomacy by affirming that science, technology and innovation constitute a discrete and independent policy sphere from the previous one. It involves leveraging science, technology, and innovation not as instruments of culture but as policy tools to address global challenges, promote cooperation, and drive progress in an increasingly interconnected world.

Science diplomacy can be categorised into three key dimensions, according to the most influential report on the subject published by the AAAS and the Royal Society in 2010. The Diplomacy for Science the primary goal is to facilitate and promote international cooperation in the realm of science. It entails diplomatic efforts aimed at fostering collaboration among scientists, researchers, and institutions from different nations, with a focus on advancing scientific knowledge and innovation. In this sense, the next dimension is Science for Diplomacy. It centres on using

scientific collaboration as a powerful tool to enhance bilateral and multilateral relationships among countries. It recognizes that shared scientific endeavours can build bridges, promote mutual understanding, and contribute to improved international relations. Finally, the Science in Diplomacy dimension involves the utilisation of scientific advice and insights to inform foreign policy objectives. It signifies the role of science in shaping and guiding diplomatic decisions, especially in addressing global challenges and complex international issues (THE ROYAL SOCIETY, AAAS, 2010).

This taxonomy serves as the foundational framework for contemporary science diplomacy initiatives, providing a clear and structured approach to the practice of science diplomacy. It guides the activities of science diplomats by delineating how science can inform diplomacy, how diplomacy can support science, and how both can be leveraged to strengthen diplomatic ties between nations.

Notwithstanding the literature offers varying definitions of science diplomacy (SD), those efforts' outcomes are closely related. These definitions encompass notions such as "interactions between researchers and diplomats" (Ruffini, 2017, p. 16) and "engaging in scientific cooperation with the explicit aim of fostering positive relations with foreign governments and societies" (Turekian; Lord, 2009). In this context, science diplomacy serves as a means to achieve foreign policy objectives (Epping, 2020). On this note, science advisory, or 'science in diplomacy', plays a pivotal role in the realm of science diplomacy, as it provides governments and policymakers with valuable scientific insights to inform their decision-making processes.

The academic literature often cites specific case studies and examples of science advisory in action, demonstrating how scientific input has influenced diplomatic negotiations and agreements. Researchers have examined instances where science advisory has played a crucial role in addressing transnational issues, such as climate change and global health crises (Cornwall, 2020; Turekian, 2018). In this context, Turekian and Agre (2018) leverage their experiences in science diplomacy to offer valuable insights into how scientific advice informs diplomatic decisions in international negotiations.

Furthermore, recent literature has broadened the scope of SD away from strictly international negotiations, and emphasised that it should not be seen as the substitution of elected



officials for trained scientists, both because there are concerns that politics might hinder academic freedom and that science might become politically instrumentalized, especially by the most powerful players. Rather, researchers have been focusing on the science advisory aspect of SD, which is aimed at potentially enhancing the quality of decision making by offering “evidence-informed options to the policy process at the domestic and international levels” (López-Vergès et al., 2021), either in the presence or absence of a legal or institutionalised framework for SD (Gittens et al., 2021).

Within this paper, we have examined the role of science diplomacy (SD) as science in diplomacy in the negotiations related to the sale of the Alpart alumina refinery in 2016. Our argument centers on the pivotal role of SD, as exemplified by the JET initiative, which united both civil society and scholars to exert pressure on the negotiations. This pressure was grounded in scientific findings regarding the potential environmental impact of China's Jinquan Iron and Steel Company (JISCO), the buyer, utilizing bauxite and coal.

## **THE CASE OF JAMAICA**

Bauxite functions as the main mineral for producing aluminum. In Jamaica, ALCOA, the world's foremost aluminum producer, has been mining bauxite since 1963. This effort has propelled Jamaica to the position of the sixth most important global bauxite supplier, trailing Australia, Guinea, Brazil, China, and India closely. In 2016, as the ink dried on the historic deal involving the sale of the Alpart alumina refinery, a counter-narrative emerged in Jamaica—one that resonated with the country's commitment to environmental stewardship and sustainable development (London Mining Network, 2022).

The bauxite industry, often referred to as 'red dirt,' has been a significant presence in Jamaica since the 1950s. In the 1960s, Jamaica rose to prominence as the world's leading bauxite producer, reaping substantial economic benefits. However, this prosperity came at a considerable cost to the environment and local communities. The expansion of the bauxite industry resulted in deforestation, water pollution, displacement of communities, destruction of agricultural land, and a marked decline in air and water quality. These detrimental effects took a toll on the health and well-being of Jamaican residents (London Mining Network, 2022).

Beyond the concerns related to mining, significant issues also surround the processing of bauxite into alumina in Jamaica. The Bayer process, which involves the use of caustic soda, has led to air pollution and the formation of extensive red-mud lakes. These lakes contain toxic heavy metals and can overflow into nearby rivers during heavy rain, posing risks to drinking water sources and local livelihoods. By the 1970s, the industry's earnings began to dwindle, raising concerns about its long-term sustainability. The mounting environmental and social challenges associated with bauxite mining and alumina processing sparked strong opposition within Jamaica (London Mining Network, 2022).

In 2017, the Jamaican government established the Cockpit Country Protected Area (CCPA). However, the CCPA was notably smaller than what had been advocated by the Cockpit Country Stakeholders Group (CCSG), excluding critical areas like Special Mining Lease (SML) 173 from protection. This decision led to renewed opposition and heightened environmental concerns. The cumulative environmental and social challenges associated with the bauxite-alumina industry in Jamaica have prompted calls for action. Central to these efforts is the Jamaica Environmental Trust (JET), which conducted the Red Dirt Study in 2020. This comprehensive study shed light on the substantial social costs endured by Jamaican society due to the industry's operations, casting doubt on its long-term sustainability (London Mining Network, 2022).

Activists in Jamaica have rallied behind the findings of the Red Dirt Study, demanding the re-designation of Cockpit Country, an immediate halt to mining activities in the area, a moratorium on further bauxite mining permits throughout Jamaica, and the development of an exit plan for the industry. This study's relevance is further highlighted by its connection to concerns surrounding the sale of the Alpart alumina refinery to China's Jinquan Iron and Steel Company (JISCO), underscoring the broader implications of bauxite and alumina operations in Jamaica.

Opposition arose against a proposed coal-fired power plant, raising questions about the environmental impact and long-term sustainability of such a project. At the heart of this opposition was the #SayNOtoCoalJA initiative, led by the Jamaica Environment Trust (JET), which encapsulated the voices of over 21,000 people united against coal-fired energy (EJATLAS, 2023). The Jamaica Environment Trust (JET) is a non-governmental organization (NGO) that was

established in 1991 with the primary mission of promoting environmental conservation and sustainable development in Jamaica (EJATLAS, 2023). This situation involves a dispute concerning a power plant that utilizes coal for energy generation. Simultaneously, it has the potential to evolve into a disagreement over the extraction of bauxite. Having a surplus of affordable energy is a vital component for the process of refining aluminum, and the lack of this resource in Jamaica has impeded the nation's aspiration to transform its bauxite resources into the final metal product through all stages of production.

In July 2016, there was a report indicating that a Russian mining company had entered into an agreement to sell its Alpart alumina refinery in Jamaica to China's Jinqun Iron and Steel Company (JISCO) for \$300 million (CGTN, 2018). This deal also included JISCO committing to rehabilitate and expand the refinery, converting it into a 500,000-ton per year aluminum smelter. These agreements were signed in Beijing, following discussions involving Jamaica's mining minister, Mike Henry, energy colleague Andrew Wheatley, Rusal, JISCO, and the Development Bank of China. The Development Bank of China expressed its willingness to invest up to \$2 billion over several years into the project. The lack of affordable energy has been a major obstacle for Jamaica in realizing its goal of fully converting bauxite into metal. The Alpart refinery had been inactive for seven years due to a sluggish alumina market after 2008 (EJATLAS, 2023).

The Russian mining company's decision to divest its 1.6-million-tonne Alpart alumina refinery in Jamaica to China's Jinqun Iron and Steel Company (JISCO) for a staggering US\$300 million marked more than just a financial transaction. It was a symphony of motives, strategies, and geopolitical implications that demonstrated the profound interplay between commerce, diplomacy, and the ever-evolving dynamics of global power. At the surface, the sale appeared driven by financial motives, with the Russian mining company capitalizing on an attractive offer while alleviating itself from non-core operations. Yet, peering beneath the economic veneer revealed intricate layers of decision-making.

It was a complex and multifaceted event that involved various motives, strategies, and geopolitical implications, highlighting the intricate interplay between business, diplomacy, and global power dynamics. The Russian company's decision to part with Alpart reflected a strategic

redirection of its focus. Shedding the refinery allowed it to consolidate its resources, concentrating efforts on core assets while securing a substantial influx of capital (Grindley, 2016; Tingling, 2016).

On the other end, JISCO's acquisition was not merely a commercial transaction. It epitomized a strategic vision that transcended industry boundaries. The acquisition of Alpart not only granted access to an alumina refinery but also a foothold in Jamaica's extensive bauxite deposits—a vital resource in aluminum production. This move showcased JISCO's intent to expand its dominion beyond its core iron and steel operations, diversifying its industrial portfolio in the pursuit of sustainable growth (Grindley, 2016).

Beyond the boardrooms and balance sheets, the deal's geopolitical implications echoed with profound resonance. It was emblematic of the burgeoning alliance between Russia and China—two geopolitical juggernauts seeking common ground amid global shifts. The transaction was more than a simple sale; it represented a deepening economic interdependence, signalling a growing synergy between these nations. China's thirst for resources and Russia's strategic maneuvering were brought into harmony through this deal, drawing the contours of a new geopolitical landscape.

The agreement also highlighted the ongoing recalibration of power dynamics in the international arena. China's relentless quest for resources to fuel its industrial might was underscored by this transaction. Simultaneously, Russia's diversification strategy, propelled by geopolitical intricacies and economic sanctions, found manifestation in this negotiation. The deal encapsulated both nations' pursuit of self-sufficiency and collaboration amid a complex global ecosystem (Tingling, 2016).

Resistance emerged against the proposed coal-fired power plant. A 1,000-MW coal-fired plant, intended to be constructed by China's Jiuquan Iron & Steel in Nain, St Elizabeth, was linked to the advancement of bauxite-aluminium production. Environmental activists opposed this initiative with a clear "No" to the coal-fired power plant in Jamaica. Over 21,000 individuals signed a petition opposing coal-fired power use in the country. Led by the Jamaica Environment Trust (JET), the #SayNOtoCoalJA campaign urged the Jamaican government to seek alternative energy sources like energy conservation, renewables, and liquefied natural gas (LNG), in line with existing government documents. Diana McCaulay, the CEO of JET, emphasized the adverse effects of coal-fired plants on public health and the environment, including respiratory problems, acid rain, and

contributions to climate change. She highlighted coal as the most environmentally harmful fossil fuel due to its substantial carbon dioxide emissions (EJATLAS, 2023; JET, 2023).

The Jamaica Environment Trust (JET), a prominent environmental advocacy group, recognized the implications of the coal-fired power plant proposal. In response, they launched the #SayNOtoCoalJA initiative—a grassroots campaign aimed at raising awareness, mobilizing public opinion, and pressuring policymakers to reconsider the energy choice for the nation's future (JET, 2023). The proposal for a coal-fired power plant in Jamaica marked a departure from the nation's earlier focus on renewable energy sources like wind, solar, and hydropower. The allure of coal lay in its potential to provide cheap and abundant energy. However, it came with an alarming environmental cost due to its significant greenhouse gas emissions, contribution to air pollution, and detrimental effects on local ecosystems (Hyslop & Nesbeth, 2012).

The #SayNOtoCoalJA campaign leveraged social media, public rallies, community engagement, and petitions to build momentum. The #SayNOtoCoalJA campaign highlighted several pressing concerns, such as (i) air pollution: coal-fired power plants are notorious for emitting harmful pollutants, contributing to poor air quality and health problems like respiratory diseases; (ii) climate change: The burning of coal releases substantial greenhouse gases, exacerbating global climate change and its far-reaching impacts; (iii) ecosystem damage: The extraction and transportation of coal can harm local ecosystems, disrupting habitats and polluting water bodies; (iv) long-term economic Consequences: While coal may appear cheap in the short term, its environmental impact can lead to long-term economic burdens associated with health care costs and environmental rehabilitation (JET, 2023).

The #SayNOtoCoalJA initiative garnered significant public support. Over 21,000 people signed the petition opposing the coal-fired power plant, a testament to the strength of public sentiment against the project. The campaign also succeeded in drawing attention to the potential environmental consequences of the coal plant and stimulating public discourse on the nation's energy choices (JET, 2023).

An up-to-date coal-fired plant can release approximately 762 kilograms of CO<sub>2</sub> per megawatt-hour of electricity generated, with the 1,000 MW plant projected to emit around 6.7

million tonnes of CO<sub>2</sub> annually. This emission level exceeded more than half of Jamaica's 2025 target under the 2015 Paris Agreement. Coal-fired power plants also emit various pollutants including mercury, lead, arsenic, sulphur dioxide, dust, and soot, impacting both public health and the environment. The opposition deemed the proposed coal plant as short-sighted, presenting dangers to local residents. Wayne Chen suggested that the immediate advantages would be outweighed by long-term losses (EJATLAS, 2023; JET, 2023).

Jamaican Energy Minister Andrew Wheatley downplayed concerns about the coal plant, stating that no formal application or proposal had been received regarding a coal-fired plant at Alpart. Nevertheless, it was argued that coal was the only viable choice for the contemplated 1,000-megawatt power plant at Alpart. Former Chairman of the Jamaica Bauxite Institute and Co-Chair of the Energy Monitoring Committee, Dr. Carlton Davis, asserted that coal was the sole feasible option for this project, despite opposition. By November 2017, the decision had shifted towards using LNG rather than coal for the Alpart plant (CGTN, 2018; EJATLAS, 2023).

The mining industry's ecological footprint has been etched into the chronicles of environmental degradation. Extracting resources from the Earth's crust disrupts delicate ecosystems, compromises biodiversity, and often results in habitat loss. The Alpart deal, with its spotlight on bauxite mining, underscores the challenging intersection between industrial ambitions and ecological well-being (Hyslop & Nesbeth, 2012; London Mining Network, 2022).

Jamaica's bauxite deposits, integral to aluminum production, bear witness to the ecological implications of mining. Bauxite extraction necessitates deforestation, soil disturbance, and watercourse alteration—activities that reshape landscapes and leave scars on the environment. The sale of the Alpart alumina refinery raised concerns about the environmental safeguards that would accompany JISCO's bauxite extraction activities. This eventuality thrust the broader discourse on the ethics and sustainability of resource extraction into the limelight (Hyslop & Nesbeth, 2012).

Amidst the economic fervor and geopolitical intricacies, ethical and environmental considerations emerged as compelling dimensions. Mining, for all its economic potential, had long been under scrutiny for its environmental footprint. The sale of Alpart triggered conversations about the environmental safeguards that would accompany the resource extraction process. Balancing industrial growth with ecological responsibility took center stage, epitomizing the global debate over sustainable development (Hyslop & Nesbeth, 2012; London Mining Network, 2022).

The deal's consequences extended to the human dimension as well. Job security, labor practices, and the infusion of capital into local communities became focal points of discussion. As the negotiation highlighted the macro-level interconnections of global economies, it underscored the micro-level impacts on individuals and communities. As the world grapples with the looming specter of climate change and resource depletion, sustainability emerges as a cardinal consideration. The mining industry, by nature, bears a weighty responsibility due to its considerable ecological impact. The Alpart deal, in this context, echoed with questions about sustainability practices that should accompany resource extraction (JET, 2023; London Mining Network, 2022).

Bauxite, a reddish-brown rock rich in aluminum ore, is extracted through open-pit mining—a process that involves removing vast layers of overlying soil and vegetation to reach the mineral deposits below. The process begins with the removal of topsoil and vegetation, often leading to extensive deforestation. This initial phase significantly alters the landscape and disrupts local ecosystems, causing irreversible changes to the natural balance (Hyslop & Nesbeth, 2012).

The bauxite deposits in Jamaica—integral to aluminum production—are finite resources. The sale of the alumina refinery called for a careful examination of how the new owners, JISCO, would ensure that the extraction and processing of these resources were conducted in a manner that preserved their longevity for generations to come. The discourse on sustainability encompassed not just the immediate financial gains but also the intergenerational equity that demands responsible stewardship of the Earth's resources (London Mining Network, 2022).

The extraction of bauxite demands considerable water usage, drawing from local water resources. This practice has the potential to stress aquatic ecosystems and disrupt hydrological cycles. Watercourses become avenues for sediment transport, altering natural flow patterns and affecting aquatic life. The result is a chain reaction that extends beyond mining sites, impacting downstream ecosystems and communities that depend on these water sources (Hyslop & Nesbeth, 2012). In the context of the Alpart deal, the extraction of bauxite and the alumina refining process's water-intensive nature necessitated rigorous monitoring of water usage and discharge. The ecological implications of the deal hinged on the adequacy of mitigation measures to prevent water resource depletion and pollution (London Mining Network, 2022).

Bauxite mining's ecological implications also extend to soil degradation. The removal of vegetation exposes the soil to the erosive forces of wind and water, leading to soil loss and decreased

fertility. The once-lush landscapes, rich in biodiversity, transform into barren wastelands—a stark reminder of the ecological toll exacted in the pursuit of aluminum production. The loss of biodiversity resulting from deforestation can have cascading effects on the entire ecosystem, affecting everything from soil health to water quality. The intricate connections between different species create a delicate balance that, when disrupted, can lead to ecological degradation (JET, 2023; London Mining Network, 2022).

One of the most glaring environmental impacts of bauxite extraction in Jamaica is the widescale deforestation required to access mineral deposits. The bulldozing and removal of trees not only disrupt local ecosystems but also contribute to soil erosion, further degrading the environment. The clearing of vegetation strips the land of its natural habitat and disrupts the delicate balance of local ecosystems. The rich biodiversity of Jamaica's forests faces an existential threat, and the intricate web of life—from flora to fauna—finds itself teetering on the edge of disruption (Hyslop & Nesbeth, 2012; London Mining Network, 2022).

The removal of vegetation and the top layer of soil exposes the land to erosive forces, including wind and water. Rainwater, no longer held in place by plant roots, washes away the loose soil, resulting in increased sedimentation in water bodies. This sedimentation not only affects aquatic habitats but also contributes to the degradation of water quality. Additionally, the chemicals used in the bauxite extraction process can seep into local water sources, contaminating freshwater ecosystems. The resulting pollution poses risks not only to aquatic life but also to the communities that depend on these water bodies for drinking and irrigation (Hyslop & Nesbeth, 2012).

As previously mentioned, the reason behind the construction of the coal power plant in St Elizabeth, Jamaica is to boost the country's energy generation, which is a vital component for the process of refining aluminum and keeping the bauxite extraction running. Therefore, the environmental concerns must involve not only the bauxite extraction itself but also the use of coal for energy generation in Jamaica. The extraction and transportation of bauxite also contribute to air pollution and greenhouse gas emissions. Dust generated during mining operations can degrade air quality and have adverse health effects on both workers and nearby communities. Furthermore, the use of heavy machinery, such as trucks and excavators, consumes fossil fuels and releases greenhouse gases, contributing to the global challenge of climate change (London Mining Network, 2022).



Burning coal releases a cocktail of pollutants into the air, including sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>). These compounds not only taint the air with an acrid smell but also pose serious health risks. Residents near coal plants could face an increase in respiratory ailments, heart diseases, and even premature deaths due to exposure to these pollutants. As the world grapples with climate change, coal-fired power plants continue to contribute to the crisis. Carbon dioxide (CO<sub>2</sub>) emissions from burning coal act as a major catalyst for global warming. Jamaica's reliance on coal energy would only add to the growing CO<sub>2</sub> levels, accelerating the dire consequences of rising temperatures, sea-level rise, and unpredictable weather patterns. Coal mining and combustion create a cascade of waste materials that find their way into water bodies. Contaminated rivers and streams that can spell disaster for aquatic life and compromise the quality of water resources. Acid mine drainage, a byproduct of coal mining, can further poison water bodies, causing long-lasting damage (London Mining Network, 2022).

## **THE NEGOTIATION**

We focus on two elements involved in a bargain: leverage power, and interests. Leverage power, the first element, addresses the positions of negotiating parts vis-à-vis one another. It relates to the differences of power between the countries, companies, and civil society. According to the Cambridge Dictionary, "leverage" is "the power to influence people and get the results you want" (Cambridge Dictionary, 2014). Within the literature, scholars employ different terms for referring to leverage, such as "bargaining power" and "negotiation power". Interests, the second, cover the parts' aims in the negotiation process, usually based on the assets they put on the negotiation table. Interests could be either tangible, that is, measurable / material - like economic benefits- or intangible, meaning unmeasurable/immaterial – like power and prestige gains (Fischhendler 2018).

The global aluminum market stood as a witness to the ripples of this negotiation. The integration of Alpart's alumina production with JISCO's expansive industrial network was poised to recalibrate the aluminum supply chain. This reconfiguration held the potential to redefine market trends, influence pricing strategies, and usher in a new era of competition. Established industry players found themselves at a crossroads, necessitating strategic pivots to accommodate the changing dynamics (CGTN, 2018; Tingling, 2016).

As the ink dried on the contract, the world bore witness to a momentous occasion—more than just a transaction, it was a snapshot of the evolving dynamics of our world. This negotiation wasn't just a sale of assets; it was a tapestry woven with strategic threads, underpinned by economic aspirations and geopolitical considerations. The impact of this transaction would be enduring, reverberating through industries, economies, and international relations. We have mapped the main political actors involved in the negotiation as well as their leverage and interests at stake, as we explain below.

Jinquan Iron and Steel Company (JISCO)'s core operations centered on iron and steel, but the acquisition of the Alpart alumina refinery was driven by a strategic move into the aluminum market. With the refinery, JISCO aimed to secure a crucial raw material, alumina, for its aluminum production. This aligned with its economic interest in diversifying its industrial portfolio. In this regard, access to Jamaica's bauxite deposits, a key ingredient in alumina production, was JISCO's main interest at the negotiation. The company's economic interest lay in ensuring a stable supply chain for raw materials, reducing vulnerability to market fluctuations and resource shortages (CGTN, 2018; Tingling, 2016).

JISCO's interest in acquiring Alpart extended beyond economics. The deal facilitated the company's expansion into international markets, enhancing its global presence and influence. In other words, JISCO's could count on the support of the Chinese government, as its commercial interest aligned with the political interest in projecting China's economic prowess and strategic outreach. China's political interest was aligned with JISCO's aim to secure vital resources for its industries. The acquisition of Alpart alumina refinery provided China with a reliable source of alumina, supporting its ambitious industrial growth and economic development (London Mining Network, 2022).

China's drive to secure bauxite reserves in Jamaica is also a reflection of its approach to mitigating resource vulnerability. With the world's largest population and a rapidly growing economy, China faces a constant need for raw materials to fuel its industries. By diversifying its sources of bauxite through investments in different regions, China aims to reduce the risk of supply disruptions and maintain stable economic growth. Therefore, JISCO's used the Chinese government interests as its leverage in the negotiations for the acquisition of the Alpart alumina refinery (CGTN, 2018; Tingling, 2016).

JISCO's leverage was increasingly powerful within the Jamaican government's officers in the negotiation. The Jamaican government's primary interest was to encourage economic growth and job creation. The Alpart deal, by sustaining and potentially expanding the alumina industry, could stimulate economic activity and contribute to national development. At the heart of Jamaica's push to attract China's involvement in its aluminum sector is a quest for economic diversification and growth. Historically reliant on traditional sectors like agriculture and tourism, Jamaica recognized the potential of the aluminum industry to inject new lifeblood into its economy. By enticing China's expertise and investment, Jamaica seeks to expand its industrial base, create jobs, and unlock new avenues of economic progress.

The negotiation was greatly affected by the interests and leverage power of a civilian organization named the Jamaica Environment Trust (JET). JET's main interest was to educate the public about the environmental and health hazards associated with coal-fired power plants. It sought to dispel misconceptions about coal as a cheap energy source by highlighting the hidden costs of pollution and climate change. It had a great leverage as the civil society was distrustful of the Chinese's interests in Jamaica and the environmental impacts at stake. By channeling the voices of concerned citizens, the JET aimed to create a groundswell of opposition. The campaign's social media presence and petitions allowed individuals to easily voice their concerns and show solidarity against the coal plant proposal (JET, 2023)

The Red Dirt Report, spearheaded by the Jamaica Environment Trust (JET), stands as a critical document in shedding light on the multifaceted challenges posed by the bauxite-alumina industry in Jamaica. It plays a pivotal role in educating the public about the environmental and health hazards associated with coal-fired power plants and, by extension, the broader environmental concerns linked to bauxite mining and processing. In providing scientific evidence, and in communicating its results to the society, this report goes beyond dispelling misconceptions about coal as a seemingly cheap energy source and delves into the hidden costs of pollution and climate change held by the population, strengthening their coalition towards a sustainable development.

Funding is vital for such a comprehensive and impactful report. The support received from organizations like the Grodzins Fund and Jamaica Conservation Partners (JCP) underscores the importance placed on addressing these pressing issues. Their financial backing enabled the Jamaica Environment Trust (JET) to collaborate with experts in various subject areas, providing them the

resources needed to research and compile each chapter of the report. Moreover, they collaborated with long-standing partners, the Environmental Law Alliance Worldwide (ELAW), further enhanced the report's depth and reach. However, the endeavor faced additional challenges due to the COVID-19 pandemic, making the financial support even more critical in navigating these unforeseen obstacles.

The Red Dirt Report, and the funding it received, are essential components in raising awareness about the environmental and social costs associated with bauxite mining and alumina processing in Jamaica, challenging the landscape of the negotiations. Power dynamics can be challenged by changing the information available and, therefore, the coalitions of support and costs of each actors' choices. The Red Dirt Report provided valuable information and evidence that supported the #SayNOtoCoalJA campaign's efforts to encourage policymakers to prioritize cleaner and more sustainable energy alternatives over coal.

In light of this, this report serves as a cornerstone for informed decision-making and advocacy efforts within the scope of science diplomacy. It aimed at mitigating the adverse impacts of these industries and safeguarding the well-being of communities and their environment. Beyond setting the dialogue between civil society and government, it marks the possible actions of science diplomacy involving private actors. .

## **FINAL REMARKS**

This paper had the goal of highlighting an organized collective initiative that sought to pressure decision-makers in Jamaica to consider more environmentally sustainable alternatives for the nation's energy future. The public outcry was intended to encourage policymakers to prioritize cleaner, renewable energy sources over coal. The #SayNOtoCoalJA initiative led by the Jamaica Environment Trust (JET) was a significant civil society movement in Jamaica that played a crucial role in influencing the outcome of the negotiation regarding the proposed coal-fired power plant. members of academia played a pivotal role in raising awareness about the potential environmental

and health risks associated with a coal-fired power plant. They conducted research, organized public forums, and disseminated information to educate the public about the implications of such a project.

Although not traditional political actors, civil society organizations like the Jamaica Environment Trust (JET) actively participated in the negotiations by voicing concerns, conducting advocacy, and engaging with policymakers. Academics and researchers provided technical expertise and conducted studies on the potential environmental impacts of the coal plant. This information was critical in presenting evidence-based arguments against the project. They met with government officials, submitted reports, and presented their findings to decision-makers, highlighting the environmental and health risks.

In conclusion, the case of the proposed coal-fired power plant in Jamaica exemplifies the significant impact that civil society organizations and academics can have on shaping environmental and energy-related negotiations. The #SayNOtoCoalJA initiative led by the Jamaica Environment Trust (JET) demonstrated the power of public outcry and grassroots movements in influencing policymakers to prioritize cleaner and more sustainable energy alternatives.

Civil society organizations like JET played a pivotal role in channeling the concerns of the public and creating a groundswell of opposition against the coal plant proposal. Through social media campaigns, petitions, and public forums, they effectively engaged with the Jamaican population, raising awareness about the hidden environmental and health costs associated with coal-fired power generation.

Furthermore, the involvement of academics and researchers provided crucial technical expertise and evidence-based arguments against the coal plant project. Their research and studies on the potential environmental impacts served as valuable resources for decision-makers. By actively participating in meetings with government officials, submitting reports, and presenting their findings, academics played a vital role in highlighting the environmental and health risks associated with the proposed plant.

This case underscores the broader importance of science diplomacy and the role it can play in multilateral negotiations. While not always directly seated at the negotiation table, the collaboration between scientific experts, civil society, and policymakers can lead to more informed and sustainable decision-making. It showcases how the synergy between scientific insights, public

advocacy, and civil society engagement can shape the outcome of negotiations, ultimately contributing to a more environmentally responsible and equitable energy future.

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