
DIGITAL AND CLIMATE COLONIALISM THROUGH ARTIFICIAL INTELLIGENCE

Laasya Adury, LLM, Jindal Global Law School

ABSTARCT

This paper aims to highlight how the Global South is disproportionately burdened with the negative consequences of the AI boom. Global South Nations are already in a vulnerable position when it comes to climate change and sustainable development, and the slew of climate related burdens that AI bring about will worsen this. The rapid growth of these technologies necessitates more hardware or massive infrastructure development, which will cause an adverse impact on the environment. This paper will particularly focus on water depletion caused by AI's massive data centres and the impact this will have on the already water-scarce Global South nations, like India. Such detrimental impacts of the tech expansion raise questions for international law. This area of global environmental and technological governance needs to be developed, especially in the context of global inequality and resource extraction from the Global South. This paper aims to address whether current international frameworks are adequate at addressing the issue at hand.

The paper first gives a brief overview of digital and climate colonialism in the context of globalization and AI development, in the context of the Global South. It then reviews the literature on TWAIL, digital colonialism and climate colonialism. The paper details how emerging technologies and their ancillary activities impact the Global South disproportionately. Ultimately, the paper identifies regulatory gaps and provides possible frameworks to ensure that the Global South is not appropriated for its resources or is placed at a disadvantaged position in the context of technology and climate change.

Keywords: Artificial Intelligence, Digital Colonialism, Climate Colonialism and TWAIL.

CHAPTER 1: INTRODUCTION

The world is trying to grapple with the advent of Artificial Intelligence (AI) and related technological developments. This phenomenon is being hailed as the Fourth Industrial Revolution and it is rooted in the expansion of massive infrastructures, which are concentrated in the Global South.¹ AI is masked as this neutral tool for advancement and the digital expansion is portrayed as a simple technological development, but in reality, this requires a massive global supply chain of data, high computational power and non-renewable natural resources. This level of resource extraction replicates historical colonial inequalities.²

The environmental impact and resource depletion by AI's infrastructure are immense and localized, while its benefits largely remain global or concentrated in the Global North. AI systems are energy intensive, and they deplete resources, especially freshwater, throughout their lifecycle.³ This is a glaring issue for the Global South, especially as most of the regions here already grapple with water scarcity, this asymmetric dynamic results in "necroexportation". Where the harmful impacts of AI are outsourced to the Global South disproportionately, while the Global North is sheltered from the consequences of its technological progress.⁴

This issue can be analyzed through the lens of digital colonialism and how AI further exacerbates digital and climate colonialism.⁵ The Third World Approaches to International Law (TWAIL) is the theoretical foundation for this critique. This paper aims to analyze whether existing international regimes enable or regulate digital colonialism. The thesis of the paper is that international law facilitates digital colonialism and exacerbates climate colonialism in this process by ignoring the needs of the Global South.⁶

CHAPTER 2: LITERATURE REVIEW

Third World Approaches to International Law (TWAIL) provides a critical lens for

¹ Mutambara, A. G. (2025). Artificial Intelligence: A driver of inclusive development and shared prosperity for the Global South.

² Kak, A. (2020, February). "The Global South is everywhere, but also always somewhere" National Policy Narratives and AI Justice. In *Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society* (pp. 307-312).

³ Regilme, S. S. F. (2024). Artificial intelligence colonialism: Environmental damage, labor exploitation, and human rights crises in the Global South. *SAIS Review of International Affairs*, 44(2), 75-92.

⁴ Ibid

⁵ Kwet, M. (2019). Digital colonialism: US empire and the new imperialism in the Global South. *Race & class*, 60(4), 326.

⁶ Bhanye, J. (2025). Artificial Intelligence (AI) and the New Colonialism of Climate Data in the Global South.

understanding how international law is structurally biased towards the Global North. Scholars have propounded that international law is not a neutral framework but the “principal language” to express domination in this era of globalization.⁷ This legal order facilitates a state of “recolonization” that undermines the autonomy of the Global South. International law reinforces this divide by prescribing uniform global standards that do not take into account the historical realities of colonial exploitation and uneven development.⁸ This structural inequality ensures that while capital paves the way for extraterritorial mobility, the Global South will remain a site of exaction shackled in the legal formworks that it had no say in shaping.⁹

The 21st century shift from territorial conquest to the centralized ownership and control of the digital ecosystem is represented by digital colonialism, which seeks to control software, hardware and network connectivity.¹⁰ In this framework, Global North “*Big-Tech giants*” like the GAFAM group (Google, Amazon, Facebook, Amazon and Microsoft) exercise imperial power by designing structures in a way to maximize their profits while siphoning value from the people of Global South, eroding national autonomy.¹¹ Extraction under digital colonialism goes beyond natural resources like freshwater and land, it extends to data and labour.¹² Data is treated as a “raw material” for aggregating power, it is extracted without meaningful consent or fair return to the communities producing it.¹² This extraction is supported by the “ghost workforce” in the Global South that remains invisible in the narrative.¹⁴ Digital colonialism also involves epistemic injustice. AI systems are trained on datasets from the Global North, thus making the systems biased towards Western values. This leads to the erosion of southern cultures, erasure of local knowledge and algorithmic discrimination.¹³

International environmental law often focuses on obligations of the states and fails to acknowledge the environmental externalities caused by massive corporate digital infrastructure.¹⁴ This flawed system allows for “necroexportation”, the transfer of the AI

⁷ Chimni, B. S. (2003). Third world approaches to international law: a manifesto. In *The third world and international order* (pp. 47-73). Brill Nijhoff.

⁸ Ibid

⁹ Chimni, B. S. (2022). The international law of jurisdiction: A TWAIL perspective. *Leiden Journal of International Law*, 35(1), 29-54.

¹⁰ Ibid (n 5)

¹¹ de Freitas, M. V. (2025). *Digital Sovereignty and Data Colonialism: Shaping a Just Digital Order for the Global South* (No. 2519). Policy Center for the New South. ¹² Ibid (n 3)

¹² Nothias, T. (2025). An intellectual history of digital colonialism. *Journal of Communication*, 75(5), 385-397. ¹⁴ Ibid (n 3)

¹³ Ibid (n 6)

¹⁴ Gioli, G., & Bettini, G. (2026). Smart adaptation or data colonialism? Interrogating the role of digital technologies in climate adaptation. *Environment and Planning E: Nature and Space*, 25148486251409982.

industry's harmful implications to the Global South. Where Global North gets the benefits of AI and the South bears the brunt of localized burdens of resource depletion and toxic waste.¹⁵ Climate colonialism highlights how the Eurocentric hegemony and capitalism result in climate impacts being disproportionately felt by the marginalized communities in the Global South. This is worsened by "climate aid colonialism", where Northern leaders use the language of foreign aid to align climate policies with the neoliberal market agenda rather than prioritize genuine redistributive justice.¹⁶ We need to reorient international climate justice to prevent it from becoming a tool for "accumulation by adaptation", where measures intended to improve resilience actually increase global inequalities.¹⁹

Existing scholarship examines digital colonialism and environmental law and by using a TWAIL lens, a nexus can be established between digital colonialism and climate injustice caused by AI in the Global South. This paper aims to highlight how international law does not merely fail at regulating the existing issues but also actively facilitates digital and climate colonial extraction in the age of AI, worsening the vulnerabilities of the Global South.

CHAPTER 3: DIGITAL COLONIALISM IN THE AGE OF AI

Digital colonialism is defined as the structural form of domination implemented by the centralized ownership and control of digital ecosystem's pillars i.e., software, hardware and network connectivity.¹⁷ Like historical colonialism relied on territory, digital colonialism is characterized by the concentration of power and control of digital technology by a few.¹⁸

This control exerted by corporations like GAFAM manifests across multiple layers. First layer is the data flow, where personal and societal data from the Global South is extracted without fair return or meaningful consent. This data is monetised abroad and processed by algorithms in the Global North.¹⁹ Another key component is the hardware aspect of technology. Digital infrastructures, especially AI's massive data centres or cloud servers, are predominantly owned by the Global North corporations. This creates infrastructural dependency and obstructs data autonomy and localization by Global South. Due to this, internet traffic between southern

¹⁵ Ibid (n 3)

¹⁶ Malherbe, N., & Oladejo, A. O. (2025). Against climate aid colonialism: the case for climate reparations and south-south solidarity. *Africa Spectrum*, 60(1), 84-105. ¹⁹ Ibid

¹⁷ Ibid (n 5)

¹⁸ Ibid (n 11)

¹⁹ Ibid

countries must be routed through the Global North, incurring cost and vulnerabilities.²⁰

The Global South has become a frontier for the expansion of AI infrastructure due to a combination of factors. Big tech companies belonging to the Global North, like GAFAM, systemically target southern regions to sustain and bear the burden of the huge computational and physical needs of the AI systems.²¹ Since AI infrastructure is water and land-intensive, the corporations prefer regions with cheap land and energy, offloading the resource burden from the northern population. This is coupled with the weak law enforcement and environmental regulations in the southern countries, which aggravate this local depletion and ecological collapse.²² Geography plays a key factor in this decision as well. The Global South is the primary site for mining rare earth minerals that are essential for AI hardware.²³ Global South also provides a big “testbed” allowing for the beta-testing of invasive and controversial technologies.²⁴

When we analyze the phenomena of digital colonialism through a TWAIL lens it is evident that digital colonialism is a reconsecration of the past colonial dynamics. Previous tools of colonialism were land, minerals and physical labour to fuel the development of northern industrialization. Now, digital colonialism has moved on to data, land, water and energy.²⁵ International law facilitates this by “harmonizing” laws across geographies while failing to regulate the “necroexportation” of environmental harm to the Global South.²⁶

Digital infrastructure in the Global South reproduces asymmetric dependency rather than genuine development. AI is masked as this great tool for development and progress but in reality it produces a “digital apartheid” in many southern regions.²⁷ There is an asymmetrical dependency on as high value R&D and ownership remain concentrated in the North while south is relegated to a passive provider of raw data and ghost labour.²⁸ There is also a dependence on

²⁰ Ibid

²¹ Singh, N. (2025). Digital colonialism and AI: A Critical Analysis. *Journal of Humanities and Education Development*, 7(4), 660931.

²² Ibid (n 3)

²³ Ibid (n 13)

²⁴ Png, M. T. (2022, June). At the tensions of south and north: Critical roles of Global South stakeholders in AI governance. In *Proceedings of the 2022 ACM Conference on Fairness, Accountability, and Transparency* (pp. 1434-1445).

²⁵ Ibid (n 5)

²⁶ Ibid (n 3)

²⁷ Ghazali, I. F. (2025). Decolonizing Algorithms: Artificial Intelligence Bias and Digital Colonialism in Global South AI Governance. *Jurnal Nawala Politika*, 3(1), 77-92.

²⁸ Okolo, C. T. (2023). AI in the Global South: Opportunities and challenges towards more inclusive governance. *The Brookings Institution*, 2.

proprietary northern tech ecosystems like google cloud that creates a technological lock-in forcing southern actors to become subservient to foreign price and design choices.²⁹ The digital apartheid is further characterized by epistemic injustice.

AI systems propagate cultural biases and languages that cause the erosion of local knowledge and cultural plurality as they are trained on northern datasets rooted in western normative landscape.³⁰

CHAPTER 4: CLIMATE COLONIALISM AND RESOURCE EXTRACTION

The digital or virtual world is often presented as an intangible entity, but this is actually rooted in a massive physical infrastructure that needs constant extensive resource consumption.³¹ Critical scholars have highlighted that the popular metaphor “Cloud” or “Cloud Computing” does not entirely represent the reality, “there is no Cloud, just someone else’s computer”.³² Thus, the “intangible” virtual world is rooted in the physical world through hyperscale data centres, underwater cables and millions of servers that demand and deplete unprecedented levels of natural resources.³³

AI throughout its lifecycle depletes large amounts of freshwater. From making the semiconductors to cooling down the massive datacentres, freshwater plays a key role in the functioning of the rapidly growing AI technology. In the Global South this consumption creates acute local ecological stress. This causes the locals to directly compete with the AI industry for their essential resources.³⁴ Thus, the advent of AI is set apart due to the stark global divide it causes. The benefits are globalized or concentrated in the north, while the south bears the localized environmental costs and externalities.³⁵

The current international environmental law regime is not equipped to deal with this. There is a regulatory and enforcement gap that is exploited by these big tech corporations. This dynamic leads to climate colonialism. The Global South is forced to bear the burden of the AI

²⁹ Ahmed, S. A. (2026, January). Algorithmic dependence and digital colonialism: a conceptual framework for artificial intelligence in education and knowledge systems of the Global South. In *Frontiers in Education* (Vol. 11, p. 1720563). Frontiers Media SA.

³⁰ Ibid (n 11)

³¹ Ibid (n 31)

³² Ibid (n 5)

³³ Schütze, P. (2024). The impacts of AI futurism: an unfiltered look at AI's true effects on the climate crisis. *Ethics and Information Technology*, 26(2), 23.

³⁴ Ibid (n 31)

³⁵ Ibid

revolution.³⁶ Ironically, AI is marketed as a tool for climate change, but these tools are designed without considering the Global South. These systems ignore the indigenous knowledge and contextual realities of the south.³⁷ Instead of addressing the systematic issues, the current frameworks foster “green washing” to enable the use of southern land and resources for northern projects. Thus, the current falls short due to its refusal to recognize or regulate AI infrastructure as a form of material extraction, especially in the Global South. Intentional law enables environmental injustice in the guise of “techno benevolence”.³⁸ Without a shift towards the Principle of Subaltern Internationalism, which prioritizes the legal and policy landscape of the developing nations, international law will remain biased towards the north.³⁹

CHAPTER 5: RECOMMENDATIONS

TWAIL Informed Reform of International Law

There needs to be a shift from “liberal internationalism” to “subaltern internationalism”. International frameworks need to explicitly acknowledge and take responsibility for their historical role in the climate crisis and material extraction inherent in this digitalized world.⁴⁰ Reforms shall prioritize the legal and policy space of the Global South rather than implementing uniform global standards that favour capitalism.⁴¹

Corporate Accountability Mechanisms

To combat digital colonialism, the international community shall impose binding corporate obligations rather than depending on voluntary mechanisms and disclosures. There shall be proper normative frameworks to ensure legal liability for human rights and environmental protection across the full AI supply chain and lifecycle. ESG disclosure shall be mandated and there shall be detailed and specific disclosures for AI-related resource use.⁴²

Data Centres and AI’s infrastructure shall be viewed as an extractive industry, and Global North corporations shall conduct mandatory environmental impact assessment before

³⁶ Ibid (n18)

³⁷ Ibid (n 16)

³⁸ Ibid (n 13)

³⁹ Ibid (n 9)

⁴⁰ Ibid

⁴¹ Ibid (n 7)

⁴² Ibid (n 1)

constructing data centres in water stressed areas of global south.⁴³

Global Governance of Digital Infrastructure

In this digital era, it is very important that the Global South stands in solidarity to challenge and resist the northern infrastructural monopolies. There needs to be strong digital data sovereignty, global southern countries need to start investing in municipal and national AI infrastructure to reduce dependence on foreign or northern providers. Epistemic pluralism needs to be prioritized to establish a collective Global South agenda for digital justice that will ensure the inclusion of indigenous knowledge in AI datasets.⁴⁴

Reformist v. Structural Change Approach

Reformists argue that the existing system can be “tamed” or moulded through better regulation, mandatory transparency and technical AI guidelines.⁴⁸ The critics of this approach, by drawing on TWAIL and decolonialization theory, argue that AI inherently creates a dynamic based on extraction and symmetry. As per these critics, the current international legal system is too deeply rooted in colonialism to be reformed.⁴⁵ Thus, as per this approach, true justice requires more than surface level reforms or amendments.

The digital ecosystem needs to be radically reformed. There needs to be an epistemic delinking that propels the movement away from western-centric technologies and towards the development of “People’s technology”.⁴⁶ Further, the structural change approach also highlights how the material pillars of the digital world i.e., software, hardware, and network and their ownership by the north will regulate the south to a “digital colony”. Therefore, for a long-term and meaningful change, there must be a radical socialisation of technology at the grassroots level that prioritizes genuine climate and digital justice.⁴⁷

⁴³ Ibid (n 24)

⁴⁴ Ibid

(n 11)

⁴⁸ Ibid

(n 31)

⁴⁵ Zia, S. (2025). Digital Colonialism: Reimagining Power, Identity, and Resistance by Decolonizing AI. *Yayasan Drestanta Pelita Indonesia*, 129-147.

⁴⁶ Ibid (n 30)

⁴⁷ Ibid (n 5)

CHAPTER 6: CONCLUSION

The paper has established that digital colonialism is not just a metaphor but a materially extractive reality. The advent of AI cannot be viewed as a virtual or weightless phenomenon. This has massive real world consequences and is rooted in our physical world through its hyperscale data centres and mining of rare earth minerals. This massive infrastructure is mostly controlled and operated by a few (GAFAM) northern corporations. This creates a state of infrastructural dependency and “necroexportation” where the Global South is relegated to a source for raw data and ghost labour without meaningful consent or ownership of the design. The Global South is forced to bear the lethal environmental and social externalities while the Global North reaps the benefits of the AI revolution.

The paper examined the issues at hand through a TWAIL lens. International law functions as the “principal language” of modern domination and facilitates recolonizations in factettes of digital and climate justice. The normative claim of the paper detailed that, without a radical reorientation of the global legal order, international law will continue to legitimize digital and climate colonialism in the age of AI. If things continue on this trajectory, a state of “digital apartheid” will prevail in the Global South. The Global South will remain as a resource periphery to the Global North, only to receive finished services it had no say in designing.

We need to rethink technological governance and environmental justice to structurally reform the global legal order so that it is not tilted towards the Global North anymore. Only through a shift from “liberal internationalism” (that masks neo-colonial agendas) to “Subaltern Internationalism” (that prioritizes the legal and policy spaces of the Global South), can we combat the AI-led combat digital and climate colonialism.

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