The rapid expansion of China's infrastructure development, both domestically and overseas through the Belt and Road Initiative (BRI), has raised significant concerns about the adequacy and transparency of Environmental Impact Assessment (EIA) reports.

The Scope of Missing EIA Reports

China's infrastructure boom has proceeded at an unprecedented pace, often outstripping the capacity[i] for thorough environmental assessment. The country's environmental impact evaluation system, while comprehensive in theory, faces significant implementation challenges in practice. Research indicates that many large-scale projects[ii], particularly those in sensitive ecological regions, have proceeded with inadequate or entirely missing environmental impact assessments.

The problem is particularly acute in China's overseas investments. According to a 2018 report on Chinese enterprises' overseas investment projects[iii], environmental and social procedure non-compliance or risk issues are frequently cited reasons for project cancellations by host country governments. This pattern reflects a broader systemic issue where China's domestic EIA standards, while robust on paper, are not consistently applied to overseas ventures.

The Medog Hydroelectric Project: A Case Study in Environmental Oversight

The Yarlung Tsangpo downstream hydroelectric project, centred on Medog County, represents the world's largest planned hydroelectric development. With a total investment of 1.2 trillion yuan (approximately $165 billion USD) and an expected generating capacity of 60,000-70,000 MW, the project dwarfs even the Three Gorges Dam[iv] in scale. Officially launched in July 2025, the project employs a "cut-bend-straight, tunnel water diversion"

development approach, planning to construct five cascade power stations. Despite its massive scope and significant environmental implications, the project has proceeded with limited public environmental impact disclosure[v].

The project's location in the Yarlung Tsangpo Great Canyon, one of Asia's most active geological fault zones where the Indian plate subducts under the Eurasian plate, presents enormous seismic risks[vi]. Climate change effects, including glacial retreat in the watershed, have increased the frequency of landslides along the riverbanks. A 2021 glacial collapse in the region triggered a massive landslide involving approximately 100 million tons of rock and ice.

Implications for Downstream Riparian States

The Medog project's environmental impact extends far beyond China's borders, affecting downstream nations India and Bangladesh. The Yarlung Tsangpo River becomes the Brahmaputra River in India before flowing into Bangladesh, supporting hundreds of millions of people. Indian officials have expressed serious concerns about the project's potential to divert up to 80% of the river's flow[vii] or conversely increase flood risks in downstream Indians states of Arunachal Pradesh and neighbouring Assam.

The Chinese Ministry of Foreign Affairs has repeatedly stated that the project will not negatively impact downstream areas and could actually benefit disaster prevention and flood control. Bangladesh has also expressed concerns[viii] about the Yarlung Tsangpo hydroelectric project through bilateral talks. Environmental advocate Sharif Jamil from *International Rivers Bangladesh* notes that the country risks being caught between unilateral Chinese and Indian decisions, having no substantial voice in water resource management. Jamil warned that China's project in such a geographically sensitive location[ix] could further compound the challenges facing downstream countries. "Now China with this giant project is in a very

sensitive geographical location over the Brahmaputra River system!”

Impact on Tibetan Buddhism and Cultural Heritage

The environmental oversight gaps become particularly concerning when examining impacts on Tibetan Buddhist culture and heritage. The Medog project affects regions considered sacred in Tibetan Buddhism, including areas known as “Padma Valley or Pemako” (□□□), core zones of spiritual significance[x].

A parallel case illustrating these cultural impacts occurred with the Gangtuo Dam project on the Jinsha River, where approximately 300 Tibetans protested the destruction of six monasteries and two villages[xi]. The affected monasteries, including Wangdui Temple and Yinnan Temple, are Sakya sect Tibetan Buddhist temples with centuries of history. These temples survived the *Cultural Revolution* and house 14th-15th century murals representing some of today’s most important Tibetan Buddhist paintings. The cultural significance of these religious sites cannot be overstated. In Tibetan Buddhism, monasteries hold extremely high and sacred status among believers. The Barkhor Street surrounding Lhasa’s Jokhang Temple exemplifies this reverence, where Tibetan pilgrims continuously circumambulate in clockwise direction as worship of the Buddha statue housed within.

Germany-based Chinese water conservancy engineer Wang Weiluo (□□□) notes that the Gangtuo reservoir dam project will directly submerge[xii] two villages and six temples along with numerous religious facilities, also affecting many sites and memorial facilities related to the Epic of King Gesar, disrupting Tibetan cultural transmission with immeasurable social and cultural damage. He lamented that the Chinese hydroelectric power project in eastern Tibet’s Great Bend is a product of extreme nationalism.

Climate Change Implications

The absence of comprehensive climate impact assessments in Chinese infrastructure projects poses significant risks for global climate goals. While the Medog project is positioned as supporting China's 2060 carbon neutrality target, the environmental assessment gaps raise questions about actual climate benefits. China's National Climate Change Communication reports[xiii] indicate that climate change has already significantly impacted the country's infrastructure and major projects. Under future climate change scenarios, risks will further increase, making climate change adverse impacts worthy of close attention. The Qinghai-Tibet region, where many large hydroelectric projects are located, is particularly vulnerable to climate change impacts. The project's claimed environmental benefits – potentially replacing 90 million tons of coal annually and reducing 300 million tons of CO_2 emissions – cannot be properly verified without comprehensive environmental impact assessments. The lack of transparent climate impact evaluations undermines confidence in these projections.

Data Centres: The Hidden Environmental Burden

An often-overlooked aspect of China's infrastructure development is the massive environmental impact of data centres, which compounds climate change pressures. China hosts 449 data centres as of 2023, ranking first in the Asia-Pacific region. By 2024, Chinese data centres accounted for 25% of global data centre electricity consumption[xiv], making China the world's second-largest electricity consumer after the United States. Current projections suggest Chinese data centre electricity demand could surge from 100-200 TWh in 2025 to 600 TWh by 2030, with corresponding CO_2 emissions potentially reaching 200 million tons of CO2 equivalent. The water consumption implications[xv] are equally staggering – a typical data centre consumes over 1.1 million litres of water daily, equivalent to the daily

water consumption of 100,000 households.

Beijing Institute of Technology research projects that[xvi] by 2030, China's data centres will reach electrical loads of 110 million kW, electricity consumption of 525.76 billion kWh, water consumption of massive proportions, and carbon emissions that will significantly impact climate goals. Despite these enormous environmental impacts, comprehensive environmental impact assessments for data centre development remain inadequate. The challenge is compounded by China's continued reliance on coal power. Currently, coal accounts for approximately 60.5% of China's energy mix, and about 70% of electricity in eastern regions where most data centres are located comes from coal power. This means data centres are indirectly contributing to significant carbon emissions through their reliance on coal-powered electricity grids.

Systemic Failures in Environmental Assessment

The pattern of missing or inadequate EIA reports reflects deeper systemic issues[xvii] in China's approach to infrastructure development. Research on China's water conservancy projects reveals that environmental impact assessments often remain limited to macroscopic qualitative discussions, with relatively little work conducted on microscopic quantitative aspects. Current assessments tend to analyse impacts on present ecological environments while providing relatively less work on ecological environment effect analysis and prediction.

China's overseas infrastructure projects face additional challenges. The variation in environmental policies and enforcement capabilities across *Belt and Road* countries often results in insufficient risk mitigation. Many host countries have weak environmental protection[xviii] and social safeguard mechanisms, meaning Chinese enterprises' operations

may fully comply with local regulations while failing to meet international law[xix] and standard requirements. The "traffic light" mechanism supported by China's Ministry of Ecology and Environment in December 2020, designed to prevent ecological and environmental risks in *Belt and Road* investment projects, remains far from becoming binding rules with actual restraining power[xx] over Chinese overseas investment projects.

Policy Recommendations and the Path Forward

Addressing the systematic gaps in environmental impact assessment requires comprehensive policy reforms. First, China must strengthen mandatory environmental impact assessment requirements for all major infrastructure projects, both domestic and overseas, with particular emphasis on transboundary impact evaluation[xxi]. Second, enhanced transparency and public participation mechanisms are essential. The current system often excludes local communities and civil society organizations from meaningful participation in environmental assessment[xxii] processes. Effective environmental impact assessments require broad stakeholder engagement, including affected communities, experts, and government departments.

Third, China should establish binding environmental standards for overseas investments that align with international best practices, regardless of host country regulatory standards. The current voluntary guidelines lack important implementation, supervision, and enforcement details. Fourth, climate impact assessments[xxiii] must become integral components of all major infrastructure projects. Given the urgent need to address climate change, projects claiming climate benefits must undergo rigorous, transparent climate impact evaluation.

Conclusion

The systematic gaps in environmental impact assessment for Chinese infrastructure projects represent a critical challenge for global environmental protection and climate change mitigation. The Medog hydroelectric project exemplifies these concerns, proceeding despite enormous environmental risks, potential downstream impacts on hundreds of millions of people, threats to Tibetan Buddhist cultural heritage, and questionable climate benefits. The environmental burden extends beyond traditional infrastructure to include the rapidly growing data centre industry, which faces inadequate environmental oversight despite massive resource consumption and carbon emissions. Without comprehensive environmental impact assessments, these projects risk undermining both local ecosystems and global climate goals.

The path forward requires fundamental reforms to China's environmental assessment system, emphasizing transparency, international standards alignment, and meaningful stakeholder participation. Only through such comprehensive changes can China's infrastructure development truly contribute to sustainable development rather than environmental degradation. As China continues its massive infrastructure expansion both domestically and globally, the international community must insist on rigorous environmental standards and transparent impact assessments. The stakes – for local communities, downstream nations, cultural heritage, and global climate stability – are simply too high to accept the current system of missing and inadequate environmental evaluations.

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