



China-Driven Rail Development: Lessons from Kenya and Indonesia

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Executive summary

China's considerable success in expanding its domestic railway network, especially its high-speed rail capacity, has drawn the attention of Global South governments. This, together with rail's prominent place in the Belt and Road Initiative (BRI) and the willingness of Chinese banks to fund railway projects, has made China a major provider of rail infrastructure around the world. This policy briefing examines the environmental, socio-economic and governance (ESG) impacts of two such projects, in Kenya and Indonesia. Both cases show problems in terms of environmental and socio-economic mitigation. These are compounded by significant lapses in (and constant controversy around) their governance. In both cases the projects raise questions about local governance, in addition to incurring serious delays and financing issues. Overall, the briefing demonstrates some of the challenges facing Chinese rail provision in the Global South, especially how weak recipient institutions can compound reputational risk.

Introduction

China is home to the world's second-largest railway network and the largest rail market. Between 2000 and 2020 its network grew from 69 000km to 146 000km of rail tracks, over one-quarter (38 000km) of which is high-speed railway (HSR), a technology that China has come to dominate in a short span of time. Rail is also at the forefront of the global expansion of Chinese companies, with many building and equipping rolling stock backbone lines across Africa, Southeast Asia and Latin America. This is boosted not only by technical expertise but also through Beijing's financial backing through the China Development Bank and the Export-Import (Exim) Bank of China, as well as strong diplomatic support.

This policy briefing examines two Chinese-funded and -built rail projects in the Global South – the [Standard Gauge Railway \(SGR\) network in Kenya](#) and the [Jakarta-Bandung High Speed Rail project](#) in Indonesia. Both projects have been beset with lapses in local governance, which also hold reputational dangers for the Chinese contractors involved.

The briefing first examines rail regulation in China before outlining and comparing ESG mitigation measures in both projects.

The Chinese railway sector

In China, the railway sector forms part of a complex top-down planning and regulatory state structure. At its top sits the National Development and Reform Commission (NDRC), whose job is to formulate and lead overall objectives on national and social development. Under the NDRC, the Department for Infrastructure Development coordinates and aligns

energy and transportation development with national development plans and makes policy recommendations for overall planning in the transport sector. Below it, railway development planning, regulation and expansion are overseen by specific ministries.

The environmental regulatory framework for construction sectors¹ has expanded significantly in recent years with the introduction of comprehensive regulations on environmental protection, sustainable energy sources and consultation with local stakeholders. This is complemented by the strict approval procedures of environmental impact assessment studies, and the introduction of harsh monetary and political punishments. Recent regulations on information disclosure² pave the way for greater transparency in railway construction.

The socio-economic impact of railways has been the focus of many researchers in China, in particular high-speed railways. Many studies have found evidence of positive economic spillovers.³ The impact, however, is not even and mostly favours under-developed or remote regions.

The rail sector rapidly accumulated technical expertise over the past three decades and grew even faster following the global financial crisis of 2008. This was owing to Beijing's aggressive stimulus spending, aimed at creating demand within China to compensate for demand contraction in advanced economies.⁴ However, this led to overcapacity. The BRI, announced in 2013, provided a way out of this predicament⁵ by opening up overseas markets for Chinese construction and engineering companies.

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China's railway sector is led by two central state-owned enterprises (SOEs): China Railway Construction Corporation Limited (CRCC) and China Railway Group Limited (CREC). CRCC and CREC were established in their present form in 2007 as central SOEs under the State-owned Assets and Administration Commission of the State Council. The companies, listed

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- 1 State Council of the People's Republic of China, "[Regulations on the Administration of Environmental Protection of Construction Projects \(Decree No. 682 \[2017\]\)](#)".
 - 2 National Railway Administration of the People's Republic of China, "[Measures for the Implementation of Government Information Disclosure by the State Railway Administration](#)", 2019.
 - 3 See, for example, Huihui Deng, Luxin Yang and Xueting Pan, "High-Speed Rail and Industrial Upgrading in China: Facts and Mechanisms", *Journal of Finance and Economics* 46 no. 6 (2020): 34-48.
 - 4 Ho-Fung Hung, *The China Boom: Why China Will Not Rule the World* (New York: Columbia University Press, 2015).
 - 5 Min Ye, *The Belt Road and Beyond: State-Mobilized Globalization in China: 1998-2018* (Cambridge: Cambridge University Press, 2020).

on the Shanghai and Hong Kong stock exchanges, are now among the world's largest construction and engineering contractors.⁶ They have similar profiles, integrating services from planning and design to financing, construction and operation. CRCC and CREC constantly compete and collaborate in China and in projects overseas. CRCC holds 54% of the Chinese domestic transportation market including expressways and subways, while CREC has built 90% of China's electrified railways and three-fifths of its urban rail transit systems. It also has an extensive portfolio spanning 90 countries in Asia, Africa, Europe and South America.

One other SOE is worth mentioning owing to its global presence and engagement in some railway projects overseas is China Communications Construction Company (CCCC). While best known for port construction, it entered the railway market in China in 2005. Its subsidiary, China Road and Bridge Corporation (CRBC), has undertaken high-profile projects in Africa.

ESG impacts: Standard Gauge Railway Kenya

Kenya's cabinet approved the SGR project linking the port of Mombasa to Malabo on the Ugandan border in August 2012, with the aim of replacing the outdated colonial-era railway to increase transport capacity. The SGR forms part of the East African Railways Master Plan (2009), aimed at connecting Kenya, Uganda, Rwanda, Burundi and the Democratic Republic of Congo. While some studies recommended refurbishing the old railway as a more economical option,⁷ Kenyan policymakers opted to build a new railway.

Despite being plagued by procurement irregularities,⁸ phase one, linking Mombasa to Nairobi (480km), was successfully completed ahead of the August 2017 elections. Phase two, connecting the capital to the dry port of Naivasha (120km) and Narok, was finalised in August 2019, following similar parameters. The third phase, from Narok to Kisumu, on the shores of Lake Victoria, and on to Malabo on the Ugandan border, is yet to kick off, as loan negotiations stalled in August 2018, casting doubt over the realisation of the whole East African master plan.⁹

Environmental

The most controversial environmental impact of the SGR was the fact that part of its route cut through Nairobi National Park, the iconic wildlife reserve on the outskirts of the

6 CRCC was 42nd and CREC 35th in Fortune Global 500 in 2021; according to ENR global contracting ranking, CRCC was the third largest global contractor in 2020.

7 Amos Kareithi, "Experts: Why Upgrade of Metre Gauge Railway Is Coming a Little Too Late", *Standard Digital*, May 12, 2019.

8 Uwe Wissenbach and Yuan Wang, "African Politics Meets Chinese Engineers: The Chinese-built Standard Gauge Railway Project in Kenya and East Africa" (Working Paper 13, China-Africa Research Initiative, Washington DC, 2017); Maria A Carrai, "Adaptive Governance Along Chinese Financed BRI Railroad Megaprojects", *World Development* 141 (2021).

9 Allan Olingo, "Kenya Fails to Secure \$3.6b from China for Third Phase of SGR Line to Kisumu", *The East African*, April 27, 2019.

capital. This elicited protests from local and international environmental groups.¹⁰ CRBC responded by opting for a less invasive route and adopting a more animal-friendly design, which entailed raising parts of the railway to allow animals to pass underneath and adding watering points along the 7km of rail that runs through the park.¹¹ Nevertheless, there are still reports that the railway has adversely affected wildlife migration patterns.¹²

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Socio-economic

Despite many problems, the environmental and socio-economic impacts of the SGR have partly been ameliorated, as China Exim Bank is said to have done comprehensive environmental and social impact assessments¹³ in accordance with its 2007 internal guidelines, and CRBC followed these protocols before starting the project. In addition, the Chinese embassy reportedly has kept the project under close scrutiny to ensure compliance.¹⁴

As part of its CSR during the project, CRBC constructed multiple boreholes to help remote communities access water, and repaired and constructed roads to improve the integration of rural communities with the railway. However, the company had less control over the relocation and compensation of local communities, which became the most controversial aspects of the SGR's social impacts.

Land compensation is the responsibility of Kenya's National Land Commission. Because of corruption, speculation, local clientelism and elite manipulation, these costs were inflated, which caused significant controversy. Research has shown that Chinese actors played smaller roles in this controversy than generally assumed, and that the main responsibility lies with Kenyan actors and the elite-dominated patronage system, which excludes many

10 See, for example, Daniel Wesangula, "[Proposal to Construct Standard Gauge Railway through Nairobi National Park Rejected](#)", *The Standard*, September 16, 2016.

11 Sebastian Mwanza and Catherine Chumo, "Will the Iconic Park Survive? Standard Gauge Railway through Nairobi National Park", *United Nations Perspectives* 32 (2019).

12 See, for example, Benson Okita-Ouma et al., "[Effectiveness of Wildlife Overpasses and Culverts in Connecting Elephant Habitats: A Case Study of New Railway Through Kenya's Tsavo National Parks](#)", *African Journal of Ecology* 59, no. 3 (2021).

13 Weidong Liu, *The Belt and Road Initiative: A Pathway towards Inclusive Globalization* (New York: Routledge, 2019).

14 Liu, *The Belt and Road Initiative*.

constituents. Despite this fact, the controversy arguably caused reputational damage for the contractors as well.¹⁵

Governance

The governance issues that haunted the land compensation process foreshadowed the massive controversy around the project's wider governance. President Uhuru Kenyatta has been accused of having bypassed regulatory constraints to fast-track financial negotiations and construction of the railway to coincide with elections.¹⁶ The cost of the project's first phase was set at \$3.8 billion. Although the Kenyan government was offered a grant component of 25% (lower than Kenya's 35% threshold),¹⁷ a credit line from China Exim Bank of \$3.2 billion was approved to fund phase one. The project construction was awarded to CRBC in exchange for a free feasibility study,¹⁸ in clear violation of the Kenyan Constitution, which requires competitive bidding for public projects.

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The terms of the loan and wider debt sustainability are the greatest points of contention. To ensure financial sustainability, China Exim Bank insisted on evidence that Treasury could finance its 15% of the project. It also insisted on an agreement between the Kenyan Port Authority and the government to enforce a crackdown on trucking, to ensure the SGR's portion of cargo profits, in order to guarantee profitability.¹⁹ This caused pushback from importers, who depend on cheaper trucking to offset the railway development levy imposed by Treasury on the customs value of imported goods to finance its part of the SGR deal.²⁰

The challenges of raising enough revenue to cover the SGR expenses and service the debt became evident upon completion of the first phase. The construction of the SGR pushed Kenya's debt to China from \$756 million in 2014 to \$6.47 billion in 2019.²¹ By mid-2020 the

15 Yuan Wang and Uwe Wissenbach, "Clientelism at Work? A Case Study of the Kenyan Standard Gauge Railway Project", *Economic History of Developing Regions* 34, no. 3 (2019): 280-299.

16 Oscar Otele, "Understanding Kenyan Agency in the Acquisition and Utilization of Chinese Development Finance in the Transport Infrastructure, 2003-2017" (PhD diss., Shandong University, 2018).

17 International Monetary Fund, *Kenya: Staff Report for the 2018 Article IV Consultation and Establishment of Performance Criteria for the Second Review Under Stand-By Arrangement* (Washington DC: IMF, October 23, 2018).

18 Republic of Kenya, Public Investments Committee, *Special Report on the Procurement and Financing of the Construction of Standard Gauge Railway from Mombasa to Nairobi* (Nairobi: PIC, April 29, 2014).

19 Jaindi Kiseru, "China's Conditions that Saw Birth of Railway Levy", *Daily Nation*, August 19, 2013.

20 Faith Ikade, "Kenyan Government Set to Impose Higher Levy Plan for Importers Avoiding SGR", *Ventures Africa*, September 25, 2020.

21 Eric Olander, "Kenya-China Debt Relief Talks Stall", *China-Africa Project*, July 10, 2020.

The construction of the SGR pushed Kenya's debt to China from \$756 million in 2014 to \$6.47 billion in 2019

SGR had accumulated operating losses estimated at \$200 million, rendering it unable to pay Afristar²² its \$28.8 million quarterly operation fee.²³ The pandemic-induced economic slump has further eroded Nairobi's capacity to repay the loan, forcing it to negotiate payment suspensions from China in 2020 and 2021. In light of the country's waning debt sustainability, China Exim Bank has thus far balked at financing phase three of the SGR.

Jakarta–Bandung High-Speed Rail, Indonesia

The construction of the \$5.5 billion, 150km HSR linking the Indonesian capital Jakarta to the textile hub of Bandung was awarded to CREC in September 2015. The rail line was projected to cut travel time between the two cities from over three hours to 45 minutes.

Environmental

While the rail project was partly justified on environmental grounds as a way to lessen traffic-related air pollution between two major cities, the environmental management of the project has been extremely controversial. There are claims that the construction has caused flooding – due to construction debris clogging drainage canals – and an explosion due to damaged gas lines, which killed a worker.²⁴

Poor environmental impact assessments were blamed for these problems, with allegations that there were few attempts to consult local communities or civil society organisations. The project runs through complex and densely built terrain, and critics have raised the danger of landslides and impacted water supply to local communities, as well as the loss of farmland.²⁵

Socio-economic

The land acquisition process was a long one, only completed in 2019. The lengthy process is explained by the complexity of negotiating compensation for 6 331 plots owned by

22 The special-purpose company operating the SGR before it is transferred to the Kenyan government. Afristar is owned by CCCC.

23 "SGR Services at Risk over Sh38bn China Firm Debt", *Business Daily*, June 9, 2020.

24 Arpan Rachman and Andi Aisyah Lamboge, "Bungled Jakarta-Bandung High-Speed Rail Line Causes Chaos", *China Dialogue*, July 28, 2020.

25 Meiki W Paendong, "The Jakarta-Bandung Rail Project: 5 Years On and Still Going Nowhere", *The Diplomat*, December 3, 2020.

residents, companies and government institutions. The latter were the most challenging, as the process triggered opportunistic behaviour by some and outright resistance from others. For instance, the West Bandung regent demanded that Kereta Cepat Indonesia China (KCIC, a joint venture between CREC and Indonesian SOEs created to construct the railway) build additional facilities (many unrelated to the HSR) in return for the issuance of construction permits in his constituency. The Indonesian Air Force resisted giving up land belonging to an airbase in east Jakarta for the construction of one of the train stations.²⁶

The process was also afflicted by irregularities (with some of the plots acquired found to be outside the route of the railway tracks),²⁷ faulty documentation and an underestimation of the land needed during the original planning process. This delayed the progression of the project and inflated costs. Following the disruption caused by the pandemic, completion was further delayed. According to sources citing KCIC, in March 2021 construction reached the 70% mark, and completion is scheduled for the end of 2022.²⁸

Governance

Governance issues related to the project arguably started during the planning stage. The government had been in negotiations regarding the project with the Japanese government since 2009. The Japan International Aid Agency had offered to finance 75% of the project at a 0.1% interest rate and with repayment over 40 years in exchange for a sovereign guarantee. This, however, had clashed with an Indonesian regulation that caps its fiscal deficit at under 3% of gross domestic product, causing negotiations to drag on for years.²⁹

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Joko Widodo, who won the presidential elections in October 2014 on the back of promises to modernise the country's infrastructure, promoted the project in an official visit to China in March 2015, resulting in China's placing a competing bid the following month. Beijing threw all its diplomatic weight behind this endeavour. In August 2015, only weeks ahead of the contract announcement, the head of China's powerful National Development and

26 Nani Afrida and Ina Parlina, "High-Speed Rail Plan Hits Another Snag", *The Jakarta Post*, January 28, 2016.

27 "Jakarta-Bandung Railway Project Stuck in Land Acquisition Stage", *The Jakarta Post*, March 16, 2018.

28 Fardi Bestari, "Progress pembangunan proyek cepat Jakarta-Bandung" (Progress in the Jakarta-Bandung High-Speed Project), *Tempo*, 13 April 2021.

29 Alvin Camba, "Derailing Development: China's Railway Projects and Financing Conditions in Indonesia, Malaysia and the Philippines" (GCI Working Paper 8, Boston University Global Development Policy Center, Boston, January 2020); Eve Warburton, "Jokowi and the New Developmentalism", *Bulletin of Indonesian Economic Studies* 52, no. 3 (2016): 297–320.

Reform Commission was dispatched as a special envoy of President Xi Jinping to deliver a feasibility report and a five-point cooperative proposal to Widodo.³⁰

The Chinese and Japanese bids were very similar in terms of conditions, with the China Development Bank also offering a loan to cover 75% of the project cost with a repayment term of 40 years. However, the Chinese bid promised to complete the project in time for the 2019 elections, and offered to waive the Indonesian government guarantee in favour of a business-to-business (as opposed to government-to-government) deal. This shifted the financing burden away from the Indonesian government.³¹ Under this agreement, KCIC, a joint venture owned 60% by four Indonesian SOEs and 40% by a CREC-led consortium,³² undertook the financial responsibility for the remaining 25% of costs.

The agreement played into Chinese ambitions to undermine Japan's position in infrastructure provision³³ and the Indonesian government's desire to avoid rigid conditionalities (such as the sovereign guarantee) and strict procedures before the project could be implemented (including a rigorous land acquisition process).³⁴

The biggest hurdle facing the HSR has been the long delay in completion and a cost overrun of nearly \$2 billion

The biggest hurdle facing the HSR has been the long delay in completion and a cost overrun of nearly \$2 billion,³⁵ owing to rising prices for materials and machinery, land acquisition issues and the onset of the pandemic in 2020. Footing the soaring costs of the project has become a major issue. The total cost of the project is now estimated by the Indonesian government at \$6 billion and by KCIC at \$8 billion.³⁶ The Indonesian side is said not to have committed sufficient funds for the project and China is refusing to provide additional funding either through the China Development Bank or the Chinese companies involved in the railway. In light of this situation, Widodo issued a decree in September

30 Xiaolin Ma, "Let the Bullet Trains Fly", *Beijing Review*, September 2, 2015.

31 Agatha Kratz and Dragan Pavličević, "Norm-Making, Norm-Taking or Norm-Shifting? A Case Study of Sino-Japanese Competition in the Jakarta-Bandung High-Speed Rail Project", *Third World Quarterly* 40, no. 6 (2019): 1107-26.

32 Siwage Dharma Negara and Leo Suryadinata, "Jakarta-Bandung High Speed Rail Project Poses Big Challenge for Jokowi", *TODAY*, January 12, 2018.

33 Kratz and Pavličević, "Norm-Making, Norm-Taking".

34 Guanie Lim, Chen Li and Emirza Adi Syailendra, "Why Is It So Hard to Push Chinese Railway Projects in Southeast Asia? The Role of Domestic Politics in Malaysia and Indonesia", *World Development* 138 (2021); Jessica C. Liao and Saori N. Katada, "Goeconomics, Easy Money, and Political Opportunism: The Perils Under China and Japan's High-Speed Rail Competition", *Contemporary Politics* 27, no. 1 (2020): 1-22.

35 Resty Woro Yuniar, "Indonesia Looks for More Friends as Bill for China-Backed Rail Project Balloons by US\$2 billion", *South China Morning Post*, September 7, 2021.

36 Koya Jibiki, "Indonesia Turns to State Cooffers as China-led Railway Project's Costs Soar", *Nikkei Asia*, October 14, 2021.

2021 enabling the government to invest state funds in the project, invalidating one of the rationales that led to the selection of the Chinese bid over the Japanese one.

Comparison

A comparison of the ESG impacts of these two projects reveal strikingly similar problems. In both cases, environmental impacts led to protests. While in the Indonesian case these were mostly triggered by wider lapses in environmental impact assessments, in Kenya the project's impact on tourism also came into play.

In both cases, land acquisition was problematic and vulnerable to politicisation. It not only caused delays but also fuelled corruption, which in turn increased the cost of the project. These issues revealed regulatory and institutional failures in both recipient governments, which also opened Chinese companies to reputational and material risks.

Land acquisition was problematic and vulnerable to politicisation ... revealing regulatory and institutional failures in both recipient governments, and opening Chinese companies to reputational and material risks

In Kenya, the state's centrality in funding public works and its reliance on foreign sources of funding raise issues regarding the financial sustainability of projects, which is worsened by the lapses in governance and planning revealed by the SGR. In Indonesia's case, efforts to split the financial burden with the corporate sector were undermined by weak state capacity to undertake its part of the deal (particularly the land acquisition process).

Beyond these specific lapses, both projects raised questions about whether these governments really found the most economically feasible infrastructure solutions, or whether the political optics of inaugurating a new rail line just before an election took precedence. The long-term economic feasibility of the projects remain in doubt, even as the controversy around their financing continues.

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Cover image

Kenya's President Uhuru Kenyatta in May 2017 inaugurated a Chinese-built railway, the country's biggest infrastructure project since independence that is aimed at cementing its role as the gateway to East Africa (Tony Karumba/AFP via Getty Images)

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