



Capturing the rains: Comparing Chinese and World Bank hydropower projects in Cameroon and pathways for South-South and North South technology transfer^{☆,☆☆}

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ABSTRACT

China is an increasingly prominent actor in infrastructure development in the Global South. Hydropower, as a renewable energy source, is a key area in which Chinese technological cooperation and finance can contribute to sustainable growth. However, many of China's overseas hydropower projects remain controversial for their social and environmental impacts.

This paper presents a comparative case study of a China Exim Bank-financed project and a World Bank-led multilateral project – both located in Cameroon – to highlight the commonalities and differences between China as a rising power and “traditional” Northern donors in the field of hydropower development. It examines the financiers' influence on tendering, financing and implementation, as well as pathways of technology transfers undertaken. While both projects adhere to domestic regulations, the rigor of norm-enforcement and the level of involvement from financiers differ considerably, with implications for the projects' construction, labor-relations and potential for technology transfers.

This study contributes to the understanding of the developing norms and practices surrounding environmental and social impact management and technology transfers in South-South cooperation by engaging in a comparison of China, a rising power, and “traditional” donors such as the World Bank, who are re-emerging in the field of infrastructure development.

1. Introduction

The need for cleaner, more sustainable pathways for development is increasingly apparent across the developing world, where the impacts of climate change are often disproportionately borne. Northern donors are now recognizing this phenomenon, which has had impacts at the multilateral level, as shown the UN Sustainable Development Goals (SDGs). This also has key implications for the engagement of emerging powers such as China, whose expertise in sectors such as hydropower and renewable energy can make significant contributions to sustainable development in the global south. China's “going global” policy has led to an increasing internationalization of Chinese enterprises. This has accelerated in recent years as China's domestic boom resulted in over-capacity, especially in the construction and industrial sectors. Chinese construction firms are now increasingly competing for international

contracts, often with the support of financial instruments from state policy banks.

In Africa, Chinese investments in energy and natural resources have attracted much attention. Chinese projects are accused of disregarding negative social and environmental impacts, neglecting workers' rights, as well as having a general lack of regard for transparency norms. China ramped up its development finance for infrastructure development in Africa at the turn of the millennium, at a time when traditional donors and multilateral development banks (MDBs)—including the World Bank—were shying away from large infrastructure finance, partly due to their environmental and social risks. However, over the last decade, the number of World Bank-financed dams has risen dramatically, as MDBs once again recognize the importance of energy infrastructure for development.

This paper examines the case of Cameroon, where both China

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Eximbank and the World Bank have actively financed hydropower projects. Cameroon has the second highest hydropower generation potential in Africa, which remains largely undeveloped. In recent years, the government has sought to leverage various foreign sources of finance to build up its hydroelectric capacity. We comparatively evaluate two hydropower projects, looking at the role and influence of Northern and Southern development partners in financing and delivering energy infrastructure, managing environmental impacts, and promoting pathways for technology transfers. We highlight several key differences between the two projects, their respective financiers' regulation and enforcement of environment and social standards, and their modes of technology transfer and diffusion.

Our analysis highlights complementary roles for Northern and Southern financiers in developing Cameroon's hydroelectric infrastructure, though they present diverging approaches to project management. Both projects adopted international standards around environmental and social impacts, but disparities exist in their enforcement mechanisms and in their institutional relations with the Cameroonian government. This has implications for the depth of the technology transfers that occur. Technical transfers and skills training by Chinese firms are common in both projects. However the institutional embedding of the World Bank led to additional 'soft' technology transfer and capacity building that may entail longer-term benefits than the turnkey model of the Chinese-financed project.

The paper is structured as follows: we first review the literature surrounding the historical role of the World Bank and China, as Northern and Southern development actors, in financing hydropower projects. We then provide an overview of Cameroon's energy and water context, focusing on two projects—Memve'ele, financed by China Eximbank, and Lom Pangar, financed by a World Bank-led consortium. We compare the financiers' decisions surrounding project finance, contracting, and implementation, their respective environmental and social standards, and their relationships with host institutions. The paper concludes with policy recommendations for Chinese actors, the World Bank and MDB donors, as well as host country governments.

2. Literature review

The entry of the "rising powers" into the global development arena has led to a new discourse on "South-South" cooperation that claims to be materially and ideationally distinct from the "North-South" relations of the post-war world order (Mawdsley, 2017). China's development cooperation and its broader foreign policy share the principles embodied in South-South Cooperation—including norms of national sovereignty, non-conditionality, and non-interference in domestic affairs (Zhang et al. 2015). However, the growth of Chinese development finance has generated fears that it is undercutting Western donors, and undermining norms of good governance. China's development finance has earned it the label of "rogue donor", which only offers assistance when the natural resources of receiving countries are at play (Naim, 2009). In reality, the connection between Chinese development finance and natural resources is far more tenuous (Dreher and Fuchs, 2015).

China's importance as a provider of development finance has accelerated since 2000. China's loans to African governments alone have risen from a total of USD 121 million in 2000 to USD 13.5 billion in 2014 (China Africa Research Initiative 2017). Of this sum, USD 13.1 billion was disbursed to countries in sub-Saharan Africa. In comparison, the World Bank Group's total commitment to sub-Saharan Africa that year was USD 15.1 billion, up from USD 14.7 billion the year before (World Bank 2014). According to the GOC, China is the single largest lender to Cameroon, with loans totaling CFA 139 billion (around USD 242 million) (Gouvernement du Cameroun, 2015).

The rise in development finance from Southern actors has provoked an urgency on the part of Western donors to integrate these new actors into existing international frameworks (Eyben and Savage 2013). While China has responded cooperatively to Northern engagement, the

balance of global economic power has shifted: the establishment of new Southern-led initiatives such as the Belt and Road Initiative, the New Development Bank and the Asian Infrastructure Investment Bank highlight China's new financial heft and international assertiveness (Chin 2016). Importantly for recipients of development finance, this trend has resulted in a greater focus on hard infrastructure as a lynchpin for economic development—at a time when traditional donors had largely shied away from infrastructure finance.

The recent history of hydropower finance highlights the divergent approaches of Northern and Southern development actors. Despite its green credentials—being a renewable energy source and a clean development mechanism (CDM)—hydropower represents a controversial area for Northern development finance, due to its high-risk and high-impact nature. The capital-intensive nature of large-scale hydropower projects presents institutional risks for corruption, and its dependence on external loan financing in turn raises questions over debt sustainability. Hydropower is also controversial due to its negative spillovers, both environmentally for affected riverine ecosystems, and socially for local displaced communities.

The World Commission on Dams (WCD) in 2000 gave a somber assessment of the benefits of dams. While the Commission, in the words of Moore et al., was "an experiment in multi-stakeholder dialogue and global governance"—including representatives from civil society, government, the private sector, IFIs and scientific communities—the 26-point guidelines it generated were the subject of "conflict and controversy" (Moore et al., 2010). The report concluded that, while dams made "an important and significant contribution to human development", the benefits did not outweigh the outsized social and environmental costs of dam construction borne disproportionately "by people displaced, by communities downstream, by taxpayers and by the natural environment" (ibid, p.xxvii; World Commission on Dams, 2000, p.xxxi). Even with World Bank projects, compensation plans were often insufficient to allow resettled populations to regain their previous living standards (Scudder, 2001).

The timing of the WCD report coincided with the cancellations of a number of controversial World Bank projects, including the Sardar Sarovar dam in India and the Arun III project in Nepal. It cemented a retreat of the international financial institutions away from large infrastructure projects for much of the following decade (Clark et al., 2003). To critics, the report was seen as a detrimental shift away from important infrastructure finance for countries struggling to build national energy capacity. It was also accused of giving too much weight to the views of anti-dam NGOs and lobbying groups against the wishes of elected developing country governments (Briscoe, 2010).

While Northern donors were moving away from hydropower, Southern players—most notably China—were ramping up their investments. As a historically water-scarce country, China built huge domestic capacity in dam construction and water management, with strong political backing (both former President Hu Jintao and Premier Wen Jiabao were formerly trained hydro-engineers). Currently, half of the world's mega-dams are located in China—most notably the Three Gorges Dam, the largest dam in the world—many of which have been criticized for their environmental impacts and massive social displacement.

China's involvement in dam construction became increasingly visible in Africa in the 2000s, with prominent projects such as Imboulou in the Republic of the Congo, the Bui Dam in Ghana, the Merowe Dam in Sudan, and the Gibe III project in Ethiopia. While International Rivers reports that 330 dams worldwide were built by Chinese firms, analyses based on such media reports are often exaggerated (International Rivers, 2017). Close examination by the China Africa Research Initiative (CARI) has shown that, while International Rivers claim over 30 Chinese dams in Africa, in reality only 17 hydropower projects in Africa have Chinese financing (Hwang et al., 2015). Regardless, these projects have attracted scrutiny in the media and by civil society actors for their economic, environmental, and social impacts

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