

### Electricity, Dams and Technology Choice in East Africa: A Window into Political Change

#### Background

In 2002, the Government of Uganda held a groundbreaking ceremony on the banks of the Nile River in anticipation of the start of construction of a 250-megawatt hydroelectric dam, the Bujagali dam. The dam was highly anticipated owing to chronic power shortages and a protracted debate about the impacts and cost of the project. Shortly after the groundbreaking, financing for the private sector led project collapsed and another ten years passed before the project was completed. In the interim, Uganda held the unenviable record of having some of the highest unit costs of electricity in the world;<sup>i</sup> one of the lowest levels of access to grid-based electricity in the world;<sup>ii</sup> and major concerns about reliability of supply for residential, commercial and industrial consumers. This state of affairs is a long way from the original vision of Winston Churchill and the British colonial government, which had once predicted that Uganda would be an industrial force if it harnessed the power of the Nile.

Once the physical manifestation of negative, 'high modernist' <sup>iii</sup> development thinking, large hydroelectric dams have re-emerged as principal engines in national development strategies in African countries. Throughout sub-Saharan Africa, there are dozens of large hydroelectric dams under construction or in development. Dams have once again become popular responses to shortages in energy supply. The dam construction activities of Ethiopia for example, or proposals for such mega-dams as Grand Inga in the Democratic Republic of Congo have gained popular attention. Yet, the debates over these massive controversial projects overshadow several other controversies and questions needing attention. Indeed, problems with dam construction have been known for decades. What remains relatively absent from research, particularly for sub-Saharan Africa, is *why* the 'hidden costs' of dams do not alter energy policy choice more often; *how* the hidden costs are evaluated relative to other options; and, *what* the short and long-term effects of the debate over and implementation of these projects are in individual countries.<sup>iv</sup> How do decision-making processes and the 'development apparatus'<sup>v</sup> produce dams as dominant solutions to energy shortages and what are the effects of those decisions on energy access, national politics, and development outcomes?

In Uganda, at the time the Bujagali project was being prepared, large-scale rural electrification programs were also being implemented – both dominantly supported by the World Bank. But these and other renewable options like wind, biomass, geothermal and solar were of secondary importance to the completion of the dam project and received little focus due to the dam having priority and owing to low capacity and human resources to deal with the other energy options. In turn, when delays in dam construction occurred, not only did the government lack energy supply alternatives, other than expensive diesel, it also re-examined how it wanted to support future energy infrastructure projects as well as who it wanted to work with. Even prior to the first major delay in the construction of the Bujagali project, the President of Uganda expressed extraordinary frustration with the World Bank's procedural requirements and maligned anyone questioning the dam as the dominant energy solution for the country. While the Bujagali project was built and is now operational, one of the legacies of the process was the government's decision to turn away from its usual development partners for large energy undertakings and instead turn to new energy partners, particularly China.

### Findings

*"The Chinese are popular with African governments because they build things: infrastructure. Western donors have recently not been keen on roads and ports and are positively allergic to dams... 'We like the Chinese. When they say they will do something, they do it. No consultants, no environmental impact, no delay. You get your road'"<sup>vi</sup>*

In Uganda, the Bujagali dam project was not a stand-alone energy undertaking. It was part of a much larger reform initiative to unbundle and regulate the sector, to encourage private sector participation, and to expand access. Rather than do this sequentially, or in stages, it undertook the dam construction and sector reform simultaneously, thus initiating what can be called a 'mega-undertaking'; that is, a very complex set of actions occurring simultaneously and interconnected. The assumption by the World Bank – the chief advisor on the process – was that if these multiple activities could be undertaken *correctly*, then the intended outcomes of sector improvement would be realized. Yet, there are few if any examples globally and certainly in Africa, where this kind of reform had taken place. Dam construction, electricity network expansion, and sector reform were seen as technical activities, with the institutional and political context not being adequately considered. Few in the government or in the World Bank recognized and/or disclosed the risky conditions they were engaged: civil society groups were becoming more adept and willing to challenge decision procedures that were not transparent or where information was not disclosed; the international community was concerned about financing a project in a country with high political risk; the negative outcomes that might arise from relying on one dominant energy technology – a dam – that was dependent on international private finance and favourable hydrological conditions were very high; and, the bureaucracy and bureaucratic structure that was supposed to facilitate this process was overwhelmed and under-resourced. The Bujagali dam seems to be a critical case of a problem widely acknowledged today: technical solutions to economic and poverty problems have often trumped the complex character of political, social and economic relations in a given country in order to achieve some vague goal of 'national development'.<sup>vii</sup> This points to a conundrum: solutions to energy shortages are desperately needed, so the incentive to move quickly and to achieve the largest energy impact or transformation with projects is high. Yet, moving quickly and investing in large, expensive, blunt projects often run counter to the domestic and internationally promoted principles of deliberate and democratic decision-making. This scenario places civil society, governments, private firms, citizens, and international agencies in highly conflict-laden processes.

The failure to recognize and acknowledge the changing domestic political contexts and the domestic and international political economy of dams in Uganda resulted in increased domestic political conflict, continued poor access to electricity, and, a rapid turn in the country's preferred development partners for energy projects. Today, China is expected to be the lead financier, and two Chinese firms the builders, of two new large hydroelectric dams in Uganda. Meanwhile, Nordic and Western European bilateral development organizations are supporting renewable energy initiatives and the World Bank's influence in the sector has waned significantly. China has come to be regarded as the go-to partner for large dam construction in Uganda, with Western bilateral partners focusing on renewable projects. This outcome raises very interesting questions about the future of energy assistance and policy choice, but also reveals the need for careful analysis of the effect of domestic political conditions on energy policies

and projects. Conversely, it also raises the question of how different policy choices effect domestic political relations.

### Implications for future research and policy

Uganda's experience in energy sector reform in the last 15 years shows how efforts to improve energy supply and access to electricity serves as an important window into political change in sub-Saharan Africa. Conversely, it also reveals how the political context shapes the character of energy policy, technology choice and implementation, and that policy choice and process can effect future approaches to energy. China's prominence in sub-Saharan is not new; but there are important implications for future energy access debates if the default in many countries becomes China as the dominant investor or builder of large dams, and other donor countries are left to cooperate or compete to support or influence the implementation of more decentralized and/or distributed energy sources. Uganda reveals the need to learn more about the political conditions and the character of energy governance – the character of relations between state and non-state interests – that produce different policy outcomes. Several research questions could follow:

- How do governments come to choose different energy policy priorities over others and what are the domestic conditions that shape those choices over others?
- How are the energy challenges in a given country being conceptualized and how do these narratives and assumptions shape the partners and energy interventions that follow?
- Are conditions leading to China's involvement in energy in sub-Saharan Africa similar in different countries? Further, if western countries are trying to carve out a niche for assistance in climate adaptation, renewable energy, and capacity building, how might China, India and Brazil alter this niche?
- What role is South Africa playing in the political economy of energy in the sub-continent? Eskom is deeply engaged in Uganda's sector. South Africa has also signed a MOU with the Democratic Republic of Congo to assist in the development of the Grand Inga hydroelectric project. Therefore, how is the political economy of dams altering the character of bilateral energy assistance in the sub-continent?
- Once an energy policy intervention has been selected, what are the conditions that affect the speed, effectiveness, and quality of implementation?
- Are there political conditions or institutional conditions that are more likely to produce 'successful' energy policy interventions? And, how is 'success' measured?

Access to energy throughout the sub-continent is desperately needed. Hence, the urgency for policy interventions that produce beneficial energy outcomes are desired by all. Yet, it is well known that interventions that produce social and ecological benefit as well as economic benefit, or that may produce the co-benefit of climate adaptation and sustainable energy, are needed urgently. Urgency and deliberative policy and political processes are often antithetical. Hence, there is a clear need to recognize that there is a tension between quickly improving energy access, and demands for more deliberative and transparent policy processes. Uganda offers a cautionary tale about the impacts of moving forward with technical responses to energy problems without recognizing the complexity of a rapidly changing political environment.

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Dr. Gore maintains an active research agenda relating to comparative urban and environmental politics; global environmental governance; urban and environmental policymaking and administration; the politics of infrastructure, agriculture and natural resources; and Internet governance. His work focuses mainly on sub-Saharan Africa and North America. In 2009, Dr. Gore received the Norton Long Young Scholar Award, presented by the Urban Politics Section of the American Political Science Association, to recognize "strong scholarship at an early career stage and exceptional promise for the future." His PhD research, focused on the politics of energy and infrastructure in Uganda, was supported by an International Development Research Centre (IDRC) Doctoral Research Award.

Dr. Gore is presently the Chief Editor of the journal, *Review of Policy Research: The Politics and Policy of Science and Technology*. The journal is the official journal of the Science, Technology and Environmental Politics (STEP) section of the American Political Science Association. He is also Book Series co-editor [with Dr. Richard Stren (Emeritus, University of Toronto)] for a new Palgrave Macmillan book series, *Urban Politics in a Global Society*.

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### Notes

<sup>i</sup> International Energy Agency, 2007, IEA Statistics 2007. Electricity Information, IEA, Paris.

<sup>ii</sup> International Energy Agency, 2011, *World Energy Outlook 2011*, retrieved 24 January 2012, <http://www.worldenergyoutlook.org/resources/energydevelopment/accesstoelectricity/>

<sup>iii</sup> Scott, James. 1998. *Seeing Like a State*. New Haven: Yale University Press.

<sup>iv</sup> Hirschman, Albert. 1967. *Development Projects Observed*. Washington: Brookings.

<sup>v</sup> Ferguson, James. 1994. *The Anti-politics Machine*. Minneapolis: University of Minnesota.

<sup>vi</sup> Dowden, Richard. 2009. *Africa: Altered States, Ordinary Miracles*. New York: Public Affairs.

<sup>vii</sup> Easterly, William. 2014. *The Tyranny of Experts*. New York: Basic Books.