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# China Came, China Built, China Left?: The Sarawakian Experience with Chinese Dam Building

Shun Deng FAM

**Abstract:** This paper uses a political ecology approach to unpack the experience of local governments and displaced communities in Sarawak, Malaysia, with Chinese dam construction at the Bakun Hydroelectric Dam. Data for the study was collected over 32 months from 2014 to 2016. The field site offered a unique insight into how recipient countries of aid are also often at the receiving end of domestic politics of donor countries. The paper finds that Chinese and Australian enterprises involved in the dam construction and resettlement of indigenous communities displayed different understandings with regards to social and environmental safeguards, resulting in a dysfunctional handover of the project from Australian to Chinese leadership. Consequently, indigenous communities were dispossessed from their land, affecting their ability to successfully reconstruct their livelihoods, with their attempts to do so causing further damage to the environment around the reservoir of the dam.

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**Keywords:** Southeast Asia, China, hydropower, green movement, international development

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## Introduction

Urban and Nordensvard (2014) wrote that three conditions have caused China to start exporting technology such as hydropower on massive scales: access to resources, access to new markets, and technological advances. First, China has a need to continue to fuel economic growth by expanding its resource base, which is quickly being depleted after years of rapid economic growth. The Chinese government facilitates such access via the “Going Out” strategy and state-assisted financing, which encourages Chinese companies to invest in overseas energy and resource sectors. Second, sectors such as hydropower have become saturated within the low-margin Chinese domestic market and, as such, the first generation of large state-owned enterprises (SOEs) operating under liberalised markets needed to move towards international markets. Third, Chinese engineering standards have also improved rapidly within sectors such as energy generation, and this has provided them with the technology and skills to meet demand in a lucrative global energy market (Bosshard 2007). Increasing public awareness of the dangers of carbon emissions, climate change, and renewable energy also helps create the conditions for exporting hydropower technology. All these factors have combined to result in exports of Chinese power-generation equipment becoming one of the best performers in the Chinese export economy. In 2000, such exports totalled USD 26.8 billion and by 2010 power-generation equipment had become China’s second-largest export, accounting for USD 309.8 billion (Dinh et al. 2013: 52).

As of November 2014 (International Rivers 2014), 308 dams entailing Chinese involvement had been completed, were under construction, or were proposed worldwide, 123 of which are in Southeast Asia (comprising 40 per cent of Chinese dams worldwide). Of the Southeast Asian dams, one in Brunei is for maintaining water supplies, one in Vietnam is for irrigation, while many others are for hydropower. The explosion in the Chinese dam-building endeavour is startling when one realises that, prior to the turn of the millennium, there had been only six Chinese-constructed dams outside of China.

China’s corporations (led by state-owned giants such as Sino-hydro), under the “Going Out” strategy, are able to offer a much more parsimonious path to infrastructural development for politically and economically isolated governments and, at least superficially, also provide geopolitical and legal cover for their projects by rigidly stick-

ing to Westphalian principles of non-interference in domestic affairs (Panda 2014). This way of implementing aid and development assistance undoubtedly puts China in a powerful position relative to recipient governments, as there is no other source of aid who would not rock the existing political boat in recipient countries. China's position of power means that in their projects, they could easily choose to approach their corporate social responsibilities by fully embracing them, enforcing a particular rejection, or anything in between. These factors certainly played out in Sarawak, Malaysia. This paper essentially looks at two main areas of concern of Chinese involvement in hydropower projects in Sarawak and Southeast Asia as a whole. First, Bakun is the clearest example of how Western green politics, despite their efforts, will likely not be able to significantly diminish demand for hydropower in developing Southeast Asia, and that Chinese hydropower corporations are well-placed to meet this demand instead. Second, in the absence of Western green and corporate social responsibility (CSR), the onus in those areas partly falls on the Chinese corporations taking over these projects; at Bakun, Chinese companies clearly failed to fulfil these obligations, especially in the absence of the requisite prodding by the recipient governments of Sarawak and Malaysia. This has resulted in adverse impacts on biodiversity, natural fisheries, and freshwater supplies, as observed elsewhere (Urban et al. 2013). Combined, these in turn contribute to the entrenching and widening of socio-economic inequalities among the displaced communities and between displaced communities and other surrounding communities (Sawyer and Gomez 2012; Cademartori 2002). Research published earlier from the same field site, and overlapped with the fieldwork period of this paper, has looked at social protections around the resettlement and noted that the Chinese involvement in this project did not include assistance with resettlement or social initiatives (Cooke et al. 2017). However, that work did not consider that Chinese enterprises began to lead the Bakun project at a considerably late stage, after Australian interests withdrew.

Instead of looking at Chinese involvement in Sarawak as a siloed concept, this paper attempts to take a more integrative political ecological approach, by also considering how it came to be that the Chinese ended up being the only viable alternative to completing the construction of Bakun. In choosing a political ecological approach, this paper necessarily admits that the environment must be a politi-

cised one to begin with. It then also follows that there are groups of actors involved, each with their own interests and agencies, and that the power differentials, established by the history of the hydroelectric dam and the lake, explains the environmental and socio-economic symptoms observed post-inundation and post-displacement (Bryant 1997, 1992; Blaikie and Brookfield 1987). Ultimately, the paper argues that the Bakun experience shows that host countries can end up being sandwiched by the differing responsibilities and domestic politics of competing aid donors, to the detriment of displaced communities and the natural environment. The Bakun project is also the only one that the author knows of in which Chinese SOEs took over the lead of a project midway through.

The second section of the paper covers the use of political ecology as a framework, and provides information regarding fieldwork. This is followed by an examination of the historical context of the international dimension of the Bakun project, with the narrative showing how Chinese SOEs took the lead in a project that started out as an Australian one. The fourth section looks at the experiences of the displaced communities through the leadership changes in the project, and how these in turn impact their livelihoods and their interactions with the environment. The final discussion section delves further into the Malaysians' specific motivations behind the project, and the perspectives from which the Chinese approach the project. The concluding section repackages the whole Bakun project into scales, which more clearly present the conflicts and results of the different approaches of the different actors, and also briefly discusses policy implications with regards to shifting leadership roles in hydro-power projects.

## Political Ecology Methodology

The political ecology approach can instead be seen as a framework in order to understand how political and environmental factors interact with each other to cause actors on various scales to effect social and environmental changes. Briefly, the political ecology approach can consist of three components (Kalipeni and Oppongb 1998), which are by no means equally weighted, nor indeed compulsory at all, such is the methodological fluidity of this field. These components are: context and scale, historical depth, and structural relationship.

“Context and scale” looks at interactions between actors and their environment through the various scales (Blaikie and Brookfield 1987). The researcher looks at how their relative power and associated political and economic differences affect the management of and access to resources and the implementation of policies that favour certain groups over others (Mayer 1996; Stonich 1993). “Historical depth” examines the interactions between actors and their environment by considering local histories and ecology. This diachronic component often reveals the rationales behind various persistent practices that may intuitively seem detrimental to the environment (Kalipeni and Oppongb 1998; Atkinson 1991; Peluso 1993). “Structural relationships” refers to the interactions between actors in an environment and the way institutions (even seemingly unrelated ones) channel these actors through a fixed, not always rational process (Kalipeni and Oppongb 1998).

The “political ecology approach” employed by various researchers uses power as a focal point, as most of the work is centred on political questions with little ecological input. A study of political ecology in and around the Bakun hydroelectric scheme and the Bakun resettlement scheme needs to focus on not just the politics of access to resources and their management, but also on the existing environment that has led to various decisions in environmental and subsistence management. Indeed, when first coining the very term “political ecology” in his critique of ecological anthropology and cultural ecology, Eric Wolf emphasised the need to weave local ecological contexts with insights into political economy (Wolf 1972). Here, environmental impacts are related to how Malaysia and China each viewed the project differently, from their own political perspective, and the steps they each took (or did not take) to protect the environment and the displaced communities.

The advantage of a political ecology approach is that it provides an avenue to conceptually integrate several areas of research. Much research has been done on the anthropological and sociological (Aiken and Leigh 2015; Alexander 2014; Tilt, Braun, and He 2009; Choy 2004; Fearnside 1999) and ecological impacts (Benchimol and Peres 2015; Fearnside 2014, 2001; Harnish et al. 2014; Palmeirim, Peres, and Rosas 2014). Some authors, such as Philip Fearnside, publish research from the same field site, from both sides of the “divide,” but have not written integrative work in the political ecology tradition

(see Fearnside 1999, 2001, 2006, 2014). In general, these studies demonstrate the often adverse social and environmental impacts of hydropower. In recent times, an increasing amount of work has been done to link the two sides, giving a clearer overview of how observations made at local-scale society and ecology are driven by the greater political economy. In particular, the political ecology approach is used frequently in research concerning hydropower, because these infrastructure projects often involve the overlapping of politics, sociology, economics, and the environment (Matthews and Geheb 2015).

The foundations of this paper are first laid by the introduction of the rationale behind the Sarawak Corridor of Renewable Energy (SCORE). We then look at how green politics turned the Bakun hydropower project from an Australian-initiated endeavour into a Chinese-led one, including how the process played out in the experiences of the displaced indigenous communities. Finally, the paper discusses how the prevailing political situation in Sarawak and the state of CSR development in China at the time created the conditions that made it possible for Sinohydro to avoid taking a role in mitigating the environmental and socio-economic effects of the Bakun Dam. Five groups of actors are involved: Chinese companies involved in hydropower construction led by Sinohydro; Western (mainly Australian) corporate interests represented by Australian hydropower companies and Rio Tinto Alcan, which was meant to buy the electricity from Bakun; the Australian green movement and Green political party; Malaysian interests mainly represented by the Sarawak state and Malaysian federal governments; and the displaced indigenous communities.

Historical information about the dam has been well-covered in the literature. Field methods included ecological and social science techniques. As mentioned previously, political ecology suffers from a lack of “ecology,” and the work for this paper is part of a larger project that attempts to tackle this issue. Ecological information here is important in deciphering the effects of post-displacement livelihood choices. Techniques include camera trapping and transect surveys of the catchment area for game animal abundances and behavioural changes, and Poisson modelling analyses for camera trap data (in prep). Social science methods include participant observation, and informal interviews. Fieldwork was spread over two and a half years, during which time I lived with one of the displaced families in a Kayan longhouse. I spoke to and collected information relevant to



the project from over 100 families spread throughout the 15 long-houses, representing five ethnic groups, from the aristocratic classes to the commoners, as well as the elected representatives. Structured methods were not used, as there was some resentment from some residents about being constantly surveyed by transient academics when I first arrived. “Last time, also there were researchers from government and universities here to survey and interview, but in the end, everything is still the same,” is a common complaint. Therefore, to capture as much information as possible, including from people who would otherwise skip focus group discussions, a decision was made to extend the period of fieldwork to embed myself into the community and gain the trust of more members of the community and the political representatives. E-mail interviews were also conducted with the community engagement consultant for Rio Tinto Alcan. Overall, the research period stretched from January 2014 to August 2016.

## Setting Up a Chinese Stage

### The Sarawak Corridor of Renewable Energy (SCORE)

Hydroelectric schemes, especially conventional hydroelectric schemes, also bring about several potential problems to governments intending to build them. Rivers have always been important to civilisation and human settlements. This is especially true in the interior of Sarawak, where the extremely mountainous terrain has formed practically insurmountable natural mobility barriers to even modern modes of land transport (Windle and Cramb 1997). Indigenous Dayak long-house tribes are thus strung out along the massively complex system of rivers and depend on the rivers for transport and confluences with tributaries for freshwater supply and fishing (Alexander 2014). Daming rivers cause water levels to rise, drastically flooding forests and food and freshwater sources (Dudgeon 2000). Indigenous riverine and farming communities will inevitably be displaced. Besides economic losses, these communities also lose their historical and cultural spaces and infrastructure (Alexander 2008). The environmental and cultural damage caused by dams can clearly be massive.

A great part of policymakers’ attraction to hydropower can be attributed to the marketing of “renewable” or “green” energy (Bird, Wüstenhagen, and Aabakken 2002). Clearly, in hydropower, no fuel is

combusted in electricity generation. In recent years, however, much environmental opposition has arisen to counter these “green” claims. Although no fossil fuel is burnt to generate electricity, it is possible for hydroelectric plants to produce higher levels of greenhouse gases than some fossil fuel-fired plants (Scherer and Pfister 2016; Fearnside 1997). Greenhouse gases in hydroelectric plants are produced by the anaerobic decomposition that happens underwater, especially in tropical areas where there are large areas of rainforests or other areas such as farmland that contain large amounts of plant biomass (Rosa et al. 2004; Fearnside 2002). This is evident at the Bakun Hydroelectric Dam site, where the smell of hydrogen sulphide is strong when the dam starts releasing water from the reservoir, and residues from the spray cover lamp posts, vegetation, and other infrastructure around it. In contrast, in the rocky boreal parts of the world, emissions from hydroelectric dams are typically equivalent to only a very small fraction of emissions from fossil fuel-fired power stations (Barros et al. 2011).

In Sarawak’s case, hydropower is an integral part of the Sarawak Corridor of Renewable Energy (SCORE). Sarawak has traditionally been considered a poor state, although due to a large oil and gas industry it has the third-largest economy among all the Malaysian states (Jomo and Wee 2002: 10). The state accounts for about a quarter of Malaysia’s petroleum production, and nearly 60 per cent of the natural gas production of what is the world’s second-largest exporter of natural gas in the world (Office of the Chief Minister of Sarawak 2015). The income from the high level of productivity, although generated in the state, goes instead to the federal government, with Sarawak receiving just 5 per cent of oil royalties (Puah, Lau, and Teo 2012). SCORE is a supply-side prescription meant to boost heavy industry, the Gross State Product, and incomes by providing cheap, renewable energy (Lau 2015). This initiative is a federal government-led project, and the first dam and the jewel in the crown is the Bakun Hydroelectric Dam, a 2400MW facility powered by a 204-metre-high reservoir that covers 700 square kilometres (an area approximately equivalent to that of Singapore, Dubai, or Brussels) (Oxford Business Group 2015; Sovacool and Bulan 2011a; Osman 2000). The process of executing the construction of the dam was fraught with examples of incompetence and reluctance. Forestry officials managed to wrongly gauge the height of the dam, and in doing so drowned al-

most 30,000 rescued seedlings of ecologically and financially valuable tree species (Sarawak Hidro and Sarawak Forestry Corp 2013). The project was also initially handed to a business associate with political connections to the then prime minister of Malaysia under a newly established company called Ekran Berhad (Sovacool and Bulan 2013; Smith 2003). After the “completion” of the biomass removal stage, which disguised the collection and sales of the valuable timber from the catchment area, the company withdrew from the project. Biomass removal, however, still was not completed, and another company, the Warghana Consortium, headed by the area’s federal member of parliament at the time took over that section of the construction contract (Velaairam 2013).

## **Australian Domestic Politics Interferes with the Bakun Project**

The fact that the Bakun hydroelectric project is an Australian-initiated project has often gone unmentioned, and as shown later in this paper, the reduction of Australian influence in favour of Chinese influence did not result in better ecological and socio-economic outcomes. Australian engineers in the 1960s identified potential dam sites, and Australian state-owned companies Snowy Mountains Hydro-electric Authority (now known as Snowy Hydro Ltd., jointly owned by the Commonwealth of Australia and the governments of New South Wales and Victoria) and Hydro Tasmania (owned by the Tasmanian government) were heavily involved in managing the stages of construction, in conjunction with the earliest contract buyer of the electricity, Rio Tinto Alcan (RTA, an Australian–Canadian company) (Alexander 2014; Sarawak Energy 2010). RTA was to build an aluminium smelter in the nearest city, Bintulu, and in line with their corporate social responsibilities, assisted in the resettlement of the people, including the provision of a professional anthropologist to consult with the communities with regards to choosing resettlement longhouse locations, as well as in the design of the longhouses themselves. On top of that, RTA funded the Asap-Koyan Development Committee (AKDC), which operated as an indigenous-led NGO to help the displaced communities, as well as to maintain and promote their culture (Rio Tinto 2013).

The Australian influence in this project was soon curtailed in this and future dam projects in Sarawak for a number of reasons. First,

the Australian dam companies were eventually confined to technical advisory roles, and finally gave up altogether under pressure from green and human rights groups over the inevitable relocation of the longhouse communities. Second, cost overruns caused the project to exceed its budget massively. The state government insisted on raising pre-agreed electricity prices, and Rio Tinto Alcan decided to pull out of Sarawak as well (*Reuters* 2012). The Chinese then wholly took over the project, with Sinohydro completing the Bakun Dam, Three Gorges Corporation completing the Murum Dam, and Chinalco signing an agreement for an aluminium smelter (Herbertson 2012; *Reuters* 2011).

The role of domestic politics in Australia as it relates to the history of the Bakun Dam should not be underestimated. Environmental politics and the green movement in Australia gained significant prominence in the post-war Australian political landscape in Tasmania from the 1960s to the 1980s through the protests against the Franklin and Lake Pedder dams (Bennett 2008). Tasmania takes its place in power-generation history as one of the pioneer adopters of hydropower; it was used to light up the city of Launceston in 1895 – the first in the Southern Hemisphere (Pierce 2007). Hydropower has since assumed a position as the primary source of power in Tasmania. When the then Hydro-Electric Commission tried to expand hydropower technologies, a long period of protest ensued; while the attempt to stop the three dams that were to form Lake Pedder failed, the Franklin Dam project was ultimately abandoned. The acrimony resulted in the downfall of Tasmania's state premier (Thomson 1985), and culminated in a lawsuit between the state government and the newly elected Hawke administration that ruled in the favour of the latter (High Court of Australia 1983). The landmark *Commonwealth v. Tasmania* case in 1983 became a turning point in history, as it marked the end of hydropower construction in Australia. Green groups in Australia eventually came together to form the Australian Greens, led by Dr. Bob Brown, a physician turned politician who was at the forefront of the Tasmanian dam protests.

The tensions between hydropower construction and the Australian Greens were revived by the revelation in Australian media that Hydro Tasmania was involved in the Bakun and Murum hydroelectric project, which involved the displacement of the Orang Ulu communities along the associated rivers as well as the submergence of vast areas of tropical rainforests. The educated members of these com-

munities also organised a trip to the various capital cities of Australia to spread the message of their plight and to exert pressure on the Australian federal and Tasmanian state governments to bring Hydro Tasmania to task (Yoon 2012), effectively introducing a new set of Australian actors with opposing interests. Within the Australian political scene, the Australian Greens had become a significant political force. The Gillard administration oversaw a hung parliament, where the Australian Labor Party could not secure a ruling majority. The Australian Greens became kingmakers and made deals with Labor to form a government. On the backs of these deals, new Green leader Christine Milne and Bob Brown supported the protesters:

The people of Tasmania are with you and do not want to see Hydro Tasmania displace 20,000 people. That is a shocking thing that Hydro Tasmania would be taking people out of their villages and destroying their livelihoods. We'll be working with you and with other Green parties around the world to do what we can to not only save only forests around the world and rivers but livelihoods of communities and local cultures and saying to Hydro Tasmania: "Get out of Sarawak now." – Sen. Christine Milne, Australian Greens. (ENS 2012)

Here in Tasmania, no more hydro dams are being built, because of community opposition. But we learn that people from Hydro Tasmania are in Sarawak helping develop massive and quite destructive dams. It is my responsibility, having fought against destructive dams in Tasmania, to see that people who are affected by these dams are not only being heard but their wishes met. That's not happening at the moment. – Sen. Bob Brown, Australian Greens. (ENS 2012)

Clearly from Brown's "it is my responsibility" remark, he placed a major Australian political force against Australian involvement in a landmark Malaysian federal government project. Hydro Tasmania then had to front an enquiry before eventually announcing that they were pulling out of Sarawak, which achieved at least one of the objectives of the Orang Ulu delegation to Australia (Bolger 2012). Coupled with the withdrawal of Rio Tinto Alcan shortly thereafter, two Australian corporations with sizeable corporate social responsibility capabilities and commitments had exited from what was still a complicated social situation in Sarawak. The responsibility of finishing construction on the hydropower plant was now in Chinese hands with Sinohydro.

## Chinese (Non-)Interactions, Marginalised Actors, and Environmental Symptoms

Informal interviews with the longhouse community members reveal a long history of Australian interactions. Australian researchers have long had a tradition of maintaining at least one anthropologist working in upriver areas, from the post-war period onwards. Therefore, it is of little surprise that some of the displaced locals thought the anthropologists working with them to rebuild their livelihoods in the early stages were university or museum anthropologists. Admittedly, there is sometimes a little confusion. Australian missionaries brought Christianity to Borneo and established the de facto state church (Sidang Injil Borneo, SIB) (Tan 2016). As such, a prevalent attitude towards Australians is that they represent benevolent foreign influences. A gap exists in the perception of Australians between the common folk and the community leaders of the delegation that arrived in Australia to protest against Hydro Tasmania. Members of the displaced communities generally spoke positively of the Australian consultants, and there was a general feeling that these consultants were doing good things for them in a trying period of time. For the things that did go wrong, such as compensation cash and land issues, access to the lake, and so on, displaced communities blamed the federal and state governments instead, and not the foreign firms constructing the dam. However, Chinese involvement in the reconstruction process was conspicuous for its absence in these conversations.

Conversations about the differences between Australian and Chinese involvement typically start with an acknowledgement of the Australian presence and consulting process. This often draws out other stories about their previous interactions, sometimes from decades ago, with missionaries or other anthropologists from Australian universities. A number also recalled the name of the Rio Tinto consultant in charge of resettlement and reconstruction, as well as a community meeting hosted for high-level Rio Tinto executives in which promises were made regarding reconstruction for the benefit of displaced communities. When it came to talking about events after the departure of the Australians, there was little to say about the Chinese, usually apart from the acknowledgement that they seemed to have become the ones in charge, although almost no one had ever run into any of the Chinese executives or workers apart from the

occasional passing by of Chinese trucks. Thoughtful, unsure, and even stunned silences from members of the community followed questions on whether they thought the Chinese should have taken over the reconstruction process the Australians had so abruptly left behind. Often, they eventually conceded that the Chinese probably could have resumed the Australian efforts around livelihood and community reconstruction. So successful were the Chinese in isolating themselves that they managed to make people forget that there were corporate social responsibilities that they should have fulfilled; in addition, in managing the former, they also deflected all the misgivings and anger away from themselves and onto the Sarawakian and Malaysian governments. It is also worth noting that the small indigenous group that protested Australian involvement did not protest the Chinese involvement. The Australian departure from Sarawak created a corporate social responsibility void that Chinese interests had failed to fill. This has previously been described as a “de-coupling” by the Chinese from social protection measures (Cooke et al. 2017).

The inadequacy in addressing livelihood reconstruction resulted in a number of social effects that in turn had knock-on effects on the environment. Effective resettlement-livelihood reconstruction requires finding solutions to a number of factors of impoverishment: landlessness, joblessness, homelessness, marginalisation, and healthlessness (Cernea 1997). These factors often need to all be addressed together, as the interconnectedness of these concepts means that the presence of one factor will bring about the others (Cernea 1998). For example, marginalisation in a new resettlement area could lead to joblessness and the crippling of one’s finances, which cause homelessness, landlessness, and healthlessness. In the case of the communities displaced by the Bakun hydropower project, the primary livelihoods of the people were made up of shifting cultivation for rice and vegetables, fishing and hunting of mainly ungulates such as deer and bearded pigs for protein, and a small amount of cash cropping of rubber, cocoa, and pepper. This was accomplished over large areas of land, which allowed for long, sustainable fallow periods to address land fertility. The relocation uprooted the 15 communities from the Bakun catchment area of almost 15,000 square kilometres to a much smaller resettlement site of 4,000 hectares, with each apartment of every longhouse village limited to a plot of three hectares of land to cultivate (Sovacool and Cooper 2013). Complaints about the unculti-

vability and inaccessibility of the new plots soon arose and became a problem for the local government and a stick for the opposition to beat the elected leaders with.

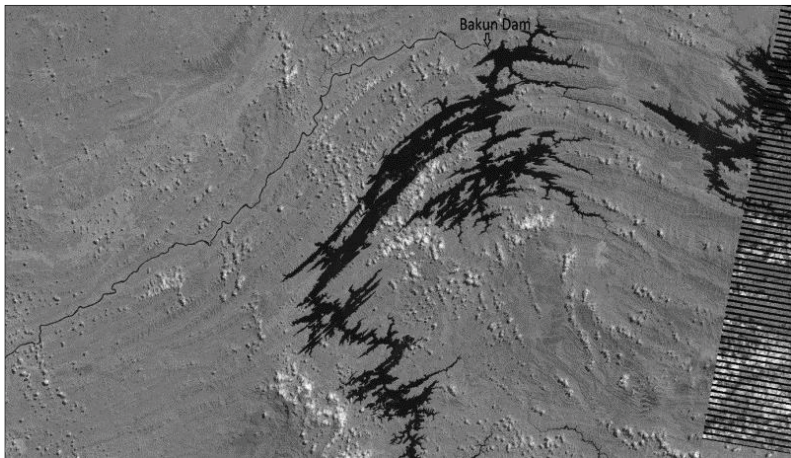
Distance to traditional hunting and fishing grounds also became problematic quickly. The two rivers that run around the resettlement site, Sungai Asap and Sungai Koyan, became polluted with waste and effluents and, in any case, would never have been able to support the fishing requirements of 15 longhouses. This meant that native customary lands remained the only source of protein. Returning to these lands would pose serious problems, and has widened the inequality between the haves and have-nots. The fundamentals of the inequality rift lie in two areas – starting capital and assets, and geography. The topography of the Bakun area is extremely steep and mountainous. As a result, the inundation by the reservoir does not form a “classical” round lake, but a relatively narrow, and extremely long one (Figure 1). The customary land for the longhouse nearest to the jetty is but a five-minute boat ride away (Uma Bawang Figure 2), but the customary land for the longhouse furthest away takes a whole day to reach (Uma Kulit Figure 2). Over the course of fieldwork for this project, the boat trip required 400 litres of fuel to get to the location of the displaced longhouse furthest away and back. For hunters from the latter, this entails the need to get bigger boats, more hunting dogs, more powerful outboard motors, and bigger and better insulators to keep the game and fish from spoiling, and to spend more time out. This requires significant outlay, which few could afford. It denies reasonable access to community resources, is a form of marginalisation, and causes the loss of livelihoods of these hunters and fishermen, with a knock-on effect of food insecurity to the wider community. Adding to the uncertainty, it remains unclear if or when the reservoir will be turned into a national park, and access to hunting lands will be restricted. The communities have no control over the access to their ancestral territory, hunting grounds, and fisheries.

Hunters and fishermen eventually reacted by working more intensively in the areas closer to the dam, in the customary lands of other longhouses, in spite of the historical taboos and the conflicts that these could lead to. The effects on the biota were significant. A camera trap survey of medium to large mammals done for the project of which this paper is also a part shows that animal activities are exclusively nocturnal in the site closest to the jetty, while diurnal activity



recovers with upstream distance (in prep). Islands also provide a level of isolation or entrapment for species, and on one of two islands surveyed, bearded pigs, the most popular game, were absent. Fisheries have also started declining. The formation of the considerably still lake created islands of fast-flowing water, where streams and waterfalls meet the lake, and concentrated but easy-to-deplete populations of fish. According to local fishermen, the sizes of the staple catfish species have greatly decreased in the popular fishing areas near the jetty. One fisherman poisoned a whole tributary just to prevent others from profiting from his longhouse's stream. A small number of people have tried to start aquaculture, but like hunting, only those who can afford the starting capital and have the political connections (basically the longhouse elites) can embark on this endeavour, and this turns fish from a public to a private resource. With the politicising of the land, access to resources and the ability to produce and gather resources had also become commodified.

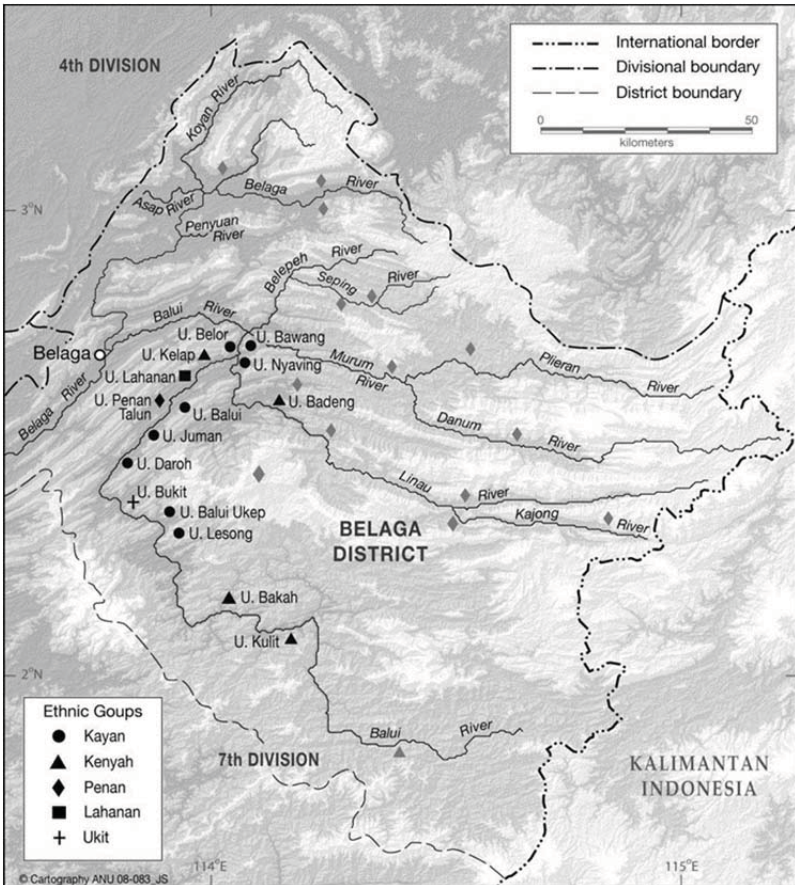
Figure 1. Landsat 8 Image Mosaic of the Bakun Dam from 16 June 2016



Source: Landsat 8, United States Geological Service Products.

Note: The small water body on the right is the reservoir of the newer Murum Dam.

Figure 2. Map of the Belaga District and Locations of the Various Indigenous Communities Prior to Impoundment of the Bakun Dam



Source: Alexander 2008.

Traditionally, hunting is one of the most important activities in Orang Ulu societies. It was an economic activity that many men engaged in, as it was easy to access hunting grounds. Gun licences were also issued easily in the past (Morrison 1993). This generation of hunters and gun owners are now old, and the weapons are passed on to their sons, who almost never have new licences of their own. Contemporary hunters are thus, strictly speaking, operating illegally. Due to the reduced number of hunters, as well as the possibility of earning more

cash, the remaining hunters also hunt and possess beyond the allowed quota of five kilograms, as well as supply to unofficial retailers, and cater to the demand for bushmeat from city folk. Furthermore, the future of their physical access to the lake is unsure, as the authorities have released a notice of consideration to turn Bakun into a national park, which would rule out any possibility of hunting in those areas. Faced with such levels of uncertainty, and occupying very weak legal and power positions, hunters respond by starting to hunt wherever is easiest, in as large quantities as possible, as well as hunting high-value species, such as pangolins. The loss of traditional hunting lands directly contributes to the disempowerment of hunters and is beginning to erode their status in the community; this is a demographic whose future is so intimately intertwined with their habitats.

To the resettled communities, the Chinese disappeared from Belaga just as suddenly as they appeared, as soon as the project was handed over. As far as the government is concerned, the compensation has been paid, and the people resettled in a place with schools, electricity, and running water. For the longhouse communities, though, their problems were just beginning. Electrical bills now had to be paid to the state utility company. Free hydroelectricity was apparently promised at the beginning, but they were paying for power from diesel generators. Where they once had free-flowing streams, they now had to contend with an inadequate supply from a water-treatment plant that frequently choked from sediment and sometimes distributed muddy water into the pipelines. Problems with water quality and quantity persisted well into 2015, when fieldwork ended. Many land plots were also uncultivable and inaccessible. These problems prompted one prominent, outspoken Dayak politician, who also holds a PhD in anthropology, to lament that the residents at the Bakun resettlement scheme were treated like “nobody’s child” (Sibon 2012).

## The Politics of SCORE’s Crown Jewel

To understand the root and the source of this predicament, one must understand the perspectives and objectives of the respective governments and how these synergise. The rupture of the relationship between the Australian corporations and the Malaysians in the process of the construction of the Bakun Dam is a case in point. Australians –

in particular, a specific section of the Australian political elite – had strong views against dams and displacement, and similarly strong views of the sanctity of natural spaces, which the Malaysians do not hold. One can point a finger towards the Australian Greens for removing well-resourced and professional CSR actors from the construction process, resulting in the suboptimal outcomes for the environment and displaced communities.

## Malaysian Interests

The Bakun Dam is now a part of a larger scheme to boost productivity and achieve greater industrialisation of an otherwise largely agrarian Sarawak (Cramb 2013, 2007). A secondary aim is to produce enough electricity to form a viable energy-export industry to the surrounding states and territories (Lau 2015; Sovacool and Bulan 2012). Energy exports has been a consistent theme throughout Malaysia's development, from the oil exports from Peninsular Malaysia, to the natural gas exports mainly from Sarawak, to the smaller, but still significant coal exports from Sabah (Malaysia Productivity Corporation 2014). Electricity can thus be argued to be an extension of the energy-export industry.

The construction of hydropower plants also has a second economic advantage in that although the initial capital outlay can be high, running costs for fuel are virtually eliminated. Sarawak is noted for the year-long consistency of its river flows, even in drier seasons. Indeed, the earliest surveys done in the 1960s under the auspices of the Colombo Plan by Australian engineers identified Sarawak as the best area in the region for hydropower, “and just Borneo [...] meaning it would be a huge waste not to tap into it” (Sovacool and Bulan 2011a). Using this and other tax incentives, the Malaysians are trying to attract energy, capital, and labour-intensive industries to invest in the coastal development nodes (Sovacool and Bulan 2012). This is meant to help the economy move beyond a primary agricultural production industry towards downstream, value-added manufacturing industries.

The thinking behind the design of SCORE is almost purely from a state-level macroeconomic point of view. The information pages in the SCORE website cover a lot of information: from the planned power supplies, to the industries assigned to each development node, to the ethnic diversity of Sarawak. The promise of ready supplies of

affordable land, utilities, and university-trained graduates are prominently displayed. Strikingly, the visuals are overwhelmingly skewed towards coastal and urban settings. What is not mentioned is that 40 per cent of Sarawakians are rural, with many wanting to stay rural, and that the development of “ecotourism” is on the reservoir that flooded the forested landscapes in Sarawak’s interior. The term “hydro-power” is mentioned only twice, and Bakun is not mentioned in any of the informational text. At the time of writing, a second hydro-power station, Murum, is online and preparations are underway for the third dam, Baleh. The construction of Murum also involved displacement of longhouse communities.

Attitudes of the Sarawakian and Malaysian governments towards resources in the interior of Sarawak have always been exploitative and extractive. Sarawak is the largest state in Malaysia and was covered mostly by tropical rainforest. Among the endemic tree species are numerous valuable sorts of hardwood timber (Ekran Berhad 1994). Since the 1980s, Sarawak has been one of the global epicentres of deforestation (Gaveau et al. 2014). In 2010, the state accounted for 0.5 per cent of the world’s rainforest by area, but 25 per cent of the global tropical log exports (International Tropical Timber Organisation 2010). A satellite imagery analysis in 2013 concluded that by then, only 5 per cent of Sarawak’s original forests remained (Global Witness 2013). The same attitudes can be seen with regard to Bakun; for instance, one interviewee commented that the construction of the dam turned “worthless water” into “valuable electricity” (Sovacool 2011a). Government-level discourse has traditionally used “native” to refer to “backward rural Dayaks,” and development invariably would involve centralising their previously disparate living locations and changing traditional shifting cultivation to intensive, estate plantations (Cramb 2013). Hence, the construction of Bakun would accomplish multiple objectives, including energy production, timber harvesting (during the biomass removal stage), and the chance to centralise the longhouse communities for easier governance (Jehom 2008).

Based on available evidence up to 2015, Cooke et al. (2017) concluded that the arrangement of having Sarawak Hydro (the then federal government entity that operated the Bakun hydropower station) depend on the state-government energy agency Sarawak Energy to dictate production is an example of elite wealth capture, which the federal government viewed as its contribution to Sarawak’s develop-

ment. However, in August 2017, the federal government sold the dam to Sarawak Energy (Povera 2017). This now leaves the Sarawak state government to wholly own the proceeds of power generation.

**Table 1. Timeline Showing the Attempts at Initiating the Bakun Dam Project, and that Peninsular Malaysia Was Meant to Be the Recipient of the Power from Bakun until Very Recently**

Date	Event
February 1966	Snowy Mountains Hydro-electric Authority of Australia commences identifying hydropower sites in Sarawak (including Bakun) under the auspices of the Colombo Plan
April 1977	Bakun HEP construction plans shelved over cost concerns
March 1979	Deputy Prime Minister Tun Mahathir suggests a revival of the Bakun project (2nd time)
May 1981	Federal government completes feasibility study that recommends Bakun HEP be built to supply electricity to Peninsular Malaysia
January 1986	Mahathir, now prime minister, initiates the process of constructing Bakun by officially allowing the start of biomass clearance from the catchment and reservoir zone
April 1988	Federal government obtains USD 56 million World Bank loan approval for the Bakun HEP
February 1990	Bakun HEP plans shelved again, due to recession and pressure from local communities
December 1992	Prime Minister's Department tries to initiate the Bakun project again (3rd time)
December 1997	Deputy Prime Minister and Finance Minister Anwar Ibrahim suspends Bakun project again amid the Asian Financial Crisis
September 1998	Deputy Prime Minister and Finance Minister Ibrahim dismissed
June 1999	Mahathir again tries to revive the Bakun project (4th time)
May 2000	Bakun project is reduced from 2400MW with undersea transmission to Peninsular Malaysia, to 500MW without undersea transmission
August 2000	Mahathir restores original plans for the Bakun HEP (5th time)
October 2003	Mahathir retires as prime minister
May 2010	Undersea cable plans finally dropped

Source: Adapted from Sovacool and Bulan (2011a), with additional information from McDermott, Pura, and Wessel (1998), and Perlez (2003).

Historically, Bakun was not a project of the state government, and had been initiated (and then shelved) by Tun Mahathir Mohamed's federal government with the main purpose of supplying electricity to Peninsular Malaysia by undersea cables across the South China Sea (Sovacool and Bulan 2011a; Table 1), and not to help develop Sarawak's industries.

## Chinese Interests

China's "Going Out" strategy, first announced in 2001, was borne out of an observation that the heavily export-driven Chinese economy was very exposed to financial crises elsewhere in the world (Yelery 2014). "Going Out" was seen as a way to diversify Chinese investments as well as to create new markets and demand for Chinese industrial output. As other researchers have pointed out, hydropower prominently features among the industries that have successfully embraced this set of policies. Others, such as journalist Jonathan Watts, noted speculatively the connections between the rise of global Chinese hydropower construction with the career histories of President Hu Jintao and Premier Wen Jiabao as, respectively, a hydropower engineer (including a period of time with Sinohydro) and a geologist (Watts 2010).

One of the reasons often cited for aggressive hydropower export was the saturation within the Chinese domestic market (Bosshard 2009). This saturation can be said to be the inadvertent result of Chinese domestic social policy. As a result of the construction of the Three Gorges Dam, critics of large-scale hydropower construction now have a focal point for their attacks. Both President Hu and Premier Wen skipped the opening ceremony of the dam (Mithen 2012). The latter also intervened in the construction plans of further hydropower dams in China, resulting in only a third of planned projects actually being allowed to commence (Stanway 2012). Clearly, this would have caused a situation where there was a glut of suppliers with only a third of forecasted projects to bid on. It would then be unsurprising that the hydropower industry would be among the most enthusiastic and aggressive adopters of the "Going Out" policy.

Besides the need to maintain industrial capacity, Matthews and Motta (2015) also noted three other economic and political drivers of Chinese hydropower aid and investment overseas based on their work in the Greater Mekong Subregion: management of foreign ex-

change reserve fluctuations, the packaging of aid and foreign direct investment together, and the building of geopolitical alliances and alignments. To protect the Chinese yuan (CNY) and shield China's foreign exchange reserves from externalities, the Chinese move state funding out of the country via state-owned enterprises such as Sino-hydro, in the form of foreign direct investment. In Bakun's case, although Chinese enterprises were contractors there to complete a project initiated by others, China's Exim Bank provided the financing. Therefore, the latter two drivers were definitely factors. Indeed, post-Bakun, from 2012 to 2015, Chinese investment into Malaysia jumped more than 10-fold (January 2017), and Sinohydro has been awarded various construction projects in Sarawak, from power stations to shopping malls.

One defining aspect of Chinese infrastructural aid or construction is commonly described as “no strings attached” (Heng 2012; McDonald, Bosshard, and Brewer 2009; Yang 2009). The Chinese government and corporations heading out of China for projects pursue a policy of “non-interference,” which essentially guarantees that the Chinese government will not intervene or participate in any domestic or governance matters within host countries (Strauss 2009). This is diametrically opposed to common Western (World Bank or International Monetary Fund) aid, which often prescribes political conditions to be met (McElhinny and Heineken 2013). A second condition is that the Chinese government pursues a policy of mutual economic benefit, which began with Deng Xiaoping's “win-win” foreign aid reform (Yelery 2014). Nevertheless, recipient governments have the negotiating room to “attach strings,” and some authors have noted Chinese flexibility in this respect (Hensengerth 2013; Tan-Mullins and Mohan 2013). Ultimately, it can be argued that China's foreign aid policy is an extension of its domestic policy. For example, it is common policy for Exim Bank projects to require that at least half of all required supplies come from Chinese enterprises (Mohan and Lampert 2013; House of Commons 2009). Chinese aid is also heavily skewed towards construction, with Chinese corporations assuming the responsibility of building infrastructure, providing a base from which other Chinese businesses can secure further benefit, and being a source of employment for Chinese citizens (Sun 2014; Corkin, Burke, and Davies 2008; Centre for Chinese Studies 2006). The stringent requirements for heavy dependence on Chinese equip-



ment, engineering, and manpower also indicate an indifferent attitude to transferring knowledge and expertise to recipient countries (Nissanke and Söderberg 2012). This is again very different from Western aid philosophy, which is more grounded in liberal-democratic ideology, as opposed to China's disinterest in democracy and interest in profit-seeking (Alden and Davies 2006). Kjøllesdal and Welle-Strand (2010) argue that China shifted from an ideological basis for foreign aid to an economic one. However, it may also be possible to think that the Chinese foreign aid philosophy is still ideologically grounded, in that the Chinese tendency towards pragmatism in foreign policy, and the belief that they are themselves an example of an economic success in the absence of transparency, liberal democracy, and yielding to Western interference, is in itself an ideology.

Malaysia's eagerness to complete the Bakun Hydroelectric Dam, a project that had been deemed politically impossible and whose scale of financial requirements for building had been judged possibly the toughest construction undertaking in the country, makes it an ideal candidate for Chinese assistance. In addition, the Malaysians had done a social impact assessment, and two environmental impact assessments, providing a level of paperwork foundation. The Chinese could then leave the issues identified in the assessments as domestic matters to the Malaysian and Sarawakian governments to address on their own terms. Chinese corporations then further benefitted from this experience by being awarded the contract to build a second dam upstream from Bakun, the Murum Dam. This clearly fits with the Chinese concept of "win-win" in the "Going Out" strategy.

## Political Conditions and CSR Obligations

Why did the Chinese take such a dramatically different approach in comparison to the Australians? It is important to look at the Bakun resettlement situation through Chinese lenses, to see how the Chinese understand CSR obligations, and the political and historical conditions that have framed this project in both Malaysia and China.

There is been an increasing amount of literature looking at Chinese CSR, the evolution of CSR as a Chinese concept and its philosophical differences with Western CSR concepts, and other differences in terms of application and compliance. Tan-Mullins and Hoffman (2014) briefly reviewed the emergence of a Chinese CSR concept. Chinese CSR came about out of trade requirements. Target

markets of mass production in the earlier periods of Chinese economic and industrial expansion became aware of suboptimal working conditions in Chinese factories. Pressures exerted on suppliers forced factories to begin to comply with a Western concept of optimal working conditions. Therefore, the first Chinese experience in CSR came in the form of their own workforce being recipients or beneficiaries of Western CSR requirements; Chinese companies did not necessarily view their original work arrangements as improper, but they changed practices for competitive trade reasons. Further developments in CSR requirements and further uptake of CSR practices by Chinese corporations were driven by the central government, again keen that they not lose their competitive edge in an increasingly informed global business and consumer environment. If these, the Western imposition and the central government push, are taken together, from the perspective of Chinese businesses CSR activities are necessarily driven by forces external to the core business itself, rather than representing a self-initiated reform of business practices. One could argue that this holds true even for state-owned enterprises.

Another external motivation of CSR compliance within China is the emergence of non-governmental organisations (NGOs), especially environmental NGOs (ENGOS), which according to the government essentially perform the role of environmental inspectors (Whitehead 2014). Corporate engagement with NGOs is very much a Western concept. Hence, in large part Chinese corporations would not voluntarily initiate engagement with NGOs or ENGOS at development sites. In the case of large infrastructure projects, contact is only maintained with their clients. In the case of Bakun, this would be the Malaysian and Sarawakian governments, and the relevant agencies, such as Sarawak Energy. Given the necessity of exogenous forces to motivate CSR activities by Chinese corporations, it could follow that, at least during Bakun's construction and in the immediate post-construction period, there needed to be a political environment that would compel environmental mitigation and livelihood-reconstruction efforts on the part of Sinohydro, which appear to be absent in Sarawak.

The history of the Bakun hydroelectric project was always one fraught with difficulties and government opaqueness. Construction of the dam had been announced, shelved, or modified multiple times (Sovacool and Bulan 2011a). At the local scale, longhouse communi-

ties themselves had been told that they would have to move, then not to move. These conflicting announcements created an environment of much uncertainty. When the project did go ahead, disputes erupted over compensation, and the calculation of compensation, with both sides accusing each other of dishonesty. Communities say that they had to go through two valuations of their crops and land, the first being two years before relocation, and the second just before the relocation, and that they were never told to expect two separate valuations. As they had expected to move, they had neglected their gardens and fruit trees, resulting in significant devaluations in the second round. However, some longhouses embarked on large extension projects, creating new blocks and apartments in the hopes of being able to claim larger compensation amounts. The process of prescribing compensation to stock assets and turning them to cash essentially commodifies their ancestral lands and weakens the bond between the communities and their ancestral lands (Cooke et al. 2017).

The governments of Malaysia and Sarawak were also opaque about the process of the dam building: from financial costs, to the awarding of contracts to environmental impacts, to the relocation of communities. There are two environmental impact assessment reports, commissioned respectively in 1994 and 2008, and one social impact assessment (Rousseau 1994), which are not easily available to the public. Perhaps due to the pressure the government and Sarawak Energy were under, getting interviews during the fieldwork period (2014–2015) from staff in the relevant departments was quite difficult. However, much important information can still be gleaned from an earlier set of interviews (Sovacool and Bulan 2011b). In particular, one of the informants pointed out that the results of the contract-awarding process appear to be dubious. Ekran Berhad was the first company awarded the contract to build the dam, even though it really only had expertise in logging. The company eventually did leave after it was deemed to have fulfilled the biomass (logging) phase of the project. Another company, Sime Darby, better known for its oil-palm plantation business, was awarded the contract for civil works, even though, in the informant's words, it "had never done anything remotely like a dam before." This effectively meant that Sime Darby's joint venture partner, Sinohydro, had practical control over the contract. Indeed, one of the reasons that Malaysia ended up having to pay for the whole project was because the processes involved in re-

settlement and assessing environmental impacts were not up to international standards as required by the World Bank and Asian Development Bank. Clearly, the construction was going ahead without internationally accepted environmental and social safeguards.

A common complaint in countries where Chinese state-owned enterprises (SOEs) are developing is that they provide little local employment, with substantial literature from Africa written about the Chinese enclaves that have sprouted from imported Chinese labour instead of the construction project creating jobs for the local workforce, and the politicised tensions between migrant and host populations (Mohan and Tan-Mullins 2009; Park 2009; Alden and Davies 2006). In this respect, the Bakun project is not dissimilar. Local labour was not employed, with foreign low-skilled workers from China, as well as the Philippines and Indonesia, being brought in. Certainly, cost was a factor. It is claimed that the foreign workers were paid less than half of what a local would expect. However, Sinohydro's prominent involvement in the Bakun project with financing support by China Exim Bank meant that there was likely to be a significant Chinese migrant labour force.

## Conclusion and Policy Implications

This paper has contributed to the discussion of the CSR behaviour of Chinese enterprises in developing nations. A political ecology approach was used in order to examine the historical, political, and power conditions that resulted in the project being shifted from Australian foreign aid to Chinese investment, as well as to look at the effects that the upheaval and differing Chinese attitudes have caused from national to community scales.

On an international scale, the paper finds that while far from perfect, the Australian presence ensured a degree of investment in the sustainability of long-term safeguards in the displaced communities, such as the establishment of the AKDC development fund to maintain cultural vibrancy and assist in livelihood re-establishment, and the active consultation in the design and location of the longhouses in the resettlement site. This stands in contrast to the Chinese approach, which aimed to deliver a specific infrastructural project, while the Malaysian federal and state governments were wholly responsible for the environmental and social safeguards of the reservoir and the re-

settlement site. Enterprises on both sides are subject to their own countries' domestic politics and societal norms. In Australia's instance, the extremely strong disapproval of hydropower projects from their own domestic hydropower experiences forced the withdrawal of Australian interests in Bakun. The Chinese were influenced by the "Going Out" policy, which encouraged SOEs to develop overseas and bring with them manpower and procurement contracts.

On a national level, the Bakun project has been repeatedly started, restarted, and shelved by the federal government. In the almost 50 years of history of the dam as a concept, the project was firmly a federal one, with Peninsular Malaysia – rather than Sarawak and its displaced and dispossessed indigenous communities – as the primary beneficiary of the cheaper electricity. The project was meant to indicate Malaysia's economic and industrial progress. It was much later on that the concept of the Sarawak Corridor of Renewable Energy was implemented, with industries based in Sarawak, without having to send power to Peninsular Malaysia. Malaysia's dependence on foreign aid and technical expertise to complete the project also meant that the Chinese were in a position of power following the Australian withdrawal.

For Sarawak's native communities, their history and culture are tied intimately to rivers and the lands around them. Hydropower has its merits as a way to generate power, but it is extremely disruptive and destructive to these riparian cultures. Their experience with the process of the construction of the Bakun hydroelectric project has been one of uncertainty from the decades of false starts by the country's leaders, and unhappiness with their federal and state representatives over the mishandling of their resettlement. Post-resettlement, communities experienced a widening of entrenched inequalities, partly due to geography, partly due to the fact that they do not retain certain and secure access to their traditional livelihood resources, and partly due to some families not having the same access to capital as other, aristocratic families. This has led to further destructive exploitation of the ancestral lands by the communities themselves, through overfishing and overhunting. The most striking aspect of the Chinese involvement in Bakun is that while many other projects elsewhere in the world included direct communication between communities and the SOEs, there seemed to be an insularity of the Chinese vis-à-vis the local communities. This is clearly seen through the resistance

movements from the displaced communities, which protested Australia's involvement at Bakun, but did nothing about the Chinese presence. Locals from various levels, from the common person to the aristocratic class, seemed surprised when asked about the lack of Chinese involvement in safeguards after the withdrawal of the Australians.

In 2016, Sinohydro established a permanent office in Kuala Lumpur, the financial capital of Malaysia (Edward 2016). This signals a very real possibility of further dams being built in Malaysia and Indochina, on top of their existing commitments. However, there may be reason to be optimistic. In the pragmatic way that Chinese factories reacted to demand for better working conditions, Chinese corporations, especially the larger state-owned enterprises such as Sinohydro, and the Chinese government are also reacting to the global scrutiny of Chinese hydropower exports (Bosshard 2010). Sinohydro briefly had a comprehensive environmental policy agreement, which included clauses on environmental protection, community consultation, and restoration of community livelihoods and income (International Rivers 2012). This agreement, though, was quickly watered down after the company restructured, reducing engagement in social and environmental protection to a promise to “respond to grievances” (Nordensvard, Urban, and Mang 2015), possibly because the 2011 policy framework based on a World Bank template conflicted with the national policy of non-interference. It may also be worth noting that Chinese overseas aid and investment towards resources and energy infrastructure may begin to decline, as the Chinese economy evolves such that consumption and services, inherently commodity non-intensive industries, become more prominent. This movement would reduce the requirement for resources, and China could conceivably begin to exert more stringent governance requirements to recipient nations (Dollar 2016).

There are signs from other dam projects that Chinese SOEs may be learning from experience. Sinohydro's tribulations with staffing and manpower during the Bui Dam project in Ghana showed that they do not necessarily have to have a Chinese-majority workforce (Kirchherr, Disselhoff, and Charles 2016). Chinese SOEs also increasingly appear to be willing to invest in safeguards in dam projects, even if their host countries do not demand this of them. For example, resettlement compensation was paid during the Myitsone Dam project in Myanmar, even though this was not legally required

(Kirchherr, Disselhoff, and Charles 2016). The Myitsone Dam project in particular is seen as influential in getting Chinese SOEs to raise their social safeguard standards, as the suspension of the project proved costly (Kirchherr 2017). Chinese development banks are also requiring SOEs to adopt stricter social safeguards, with China Exim Bank once even suspending funding for a dam in Gabon when environmental safeguard lapses were reported (Bosshard 2010).

However, it takes two hands to clap. Instead of pushing all the responsibility onto Chinese enterprises, host governments also need ensure Chinese enterprises stick to their commitments. With the increasing commercialisation of the operations of SOEs, they are now motivated to bid for and win dam projects for their own profit margins, without the political backing of the central government in China (Kirchherr 2017). This has been observed mainly in Africa (Kirchherr, Disselhoff, and Charles 2016; Tan-Mullins and Mohan 2013), but can occur anywhere that is too far for the electricity to be sent back to China, such as in the case of Bakun. Earlier work with Chinese SOEs has shown that under such pressures, expediency to complete projects means that they may still skip safeguard consultations, as long as there is little risk of the project being shut down or suspended (Kirchherr, Disselhoff, and Charles 2017). However, Chinese SOEs are also known to comply with safeguard practices in host countries with stricter legislation, and there is an increasing awareness of the need to maintain their reputations (Kirchherr, Disselhoff, and Charles 2016). Therefore, Chinese SOEs and the host countries need to work together to ensure social and environmental safeguards are in place at high standards. In the case of Bakun, there is a distinct lack of clarity and continuity on this front, with the withdrawal of the Australian enterprises. Host governments also need to reassess their energy-mix requirements and consider other forms of renewable energy. In the case of Sarawak, solar and wind have been shown to be viable energy alternatives, especially as those technologies have become more advanced and readily available (Shirley and Kammen 2015). In other places, hydropower may still have roles to play in responsible renewable-energy mixes (Tan-Mullins, Urban, and Mang 2017). Western governments may also need to reconsider their hardline tendencies on projects that involve displacement, as the Bakun Dam experience shows that a forced withdrawal in some cases may lead to even more suboptimal outcomes for the projects that they leave behind.

## References

- Aiken, S. Robert, and Colin H. Leigh (2015), Dams and Indigenous People in Malaysia: Development, Displacement and Resettlement, in: *Geografiska Annaler: Series B, Human Geography*, 97, 1, 69–93.
- Alden, Chris, and Martyn Davies (2006), A Profile of the Operations of Chinese Multinationals in Africa, in: *South African Journal of International Affairs*, 13, 1, 83–96.
- Alexander, Jennifer (2014), *Environment, Dislocation and Cultural Space, the Bakun Resettlement Scheme*, paper presented at the 12th Borneo Research Council Conference “Diversity and Dynamism in Borneo”, August, Sabah: Kota Kinabalu.
- Alexander, Jennifer (2008), The Lahanan of the Balui, 1963–2006, in: *Borneo Research Bulletin*, 39, 104–127.
- Atkinson, Adrian (1991), Laying out the Ground, in: Adrian Atkinson (ed.), *Principles of Political Ecology*, London: Behlhaven, 13–50.
- Barros, Nathan, Jonathan J. Cole, Lars J. Tranvik et al. (2011), Carbon Emission from Hydroelectric Reservoirs Linked to Reservoir Age and Latitude, in: *Nature Geoscience*, 4, 9, 593–596.
- Benchimol, Marlene, and Carlos A. Peres (2015), Widespread Forest Vertebrate Extinctions Induced by a Mega Hydroelectric Dam in Lowland Amazonia, in: *PLoS One*, 10, 7, e0129818.
- Bennett, Scott (2008), *The Rise of the Australian Greens*, Parliament of Australia, Research Paper 8 2008-09, Canberra, online: <[www.aph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/pubs/rp/rp0809/09rp08](http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp0809/09rp08)> (1 March 2018).
- Bird, Lori, Rolf Wüstenhagen, and Jørn Aabakken (2002), A Review of International Green Power Markets: Recent Experience, Trends, and Market Drivers, in: *Renewable and Sustainable Energy Reviews*, 6, 513–536.
- Blaikie, Piers, and Harold Brookfield (eds) (1987), *Land Degradation and Society*, London: Methuen.
- Bolger, Rosemary (2012), Hydro Walks Away from Malaysian Dam Projects, in: *The Examiner*, 5 December, online: <[www.examiner.com.au/story/1168158/hydro-walks-away-from-malaysian-dam-projects/?cs=95](http://www.examiner.com.au/story/1168158/hydro-walks-away-from-malaysian-dam-projects/?cs=95)> (1 March 2018).
- Bosshard, Peter (2010), China’s Overseas Dam Builders: From Rogue Players to Responsible Actors?, in: *The Asia-Pacific Journal*, 8, 17, 2, 1–5, online: <<https://apjif.org/-Peter-Bosshard/3347/article.pdf>> (1 March 2018).



- Bosshard, Peter (2009), China Dams the World, in: *World Policy Journal*, 26, 4, 43–51.
- Bosshard, Peter (2007), *China's Role in Financing African Infrastructure*, Berkeley, CA: International Rivers Network.
- Bryant, Raymond L. (1997), Beyond the Impasse: The Power of Political Ecology in Third World Environmental Research, in: *Area*, 29, 1, 5–19.
- Bryant, Raymond L. (1992), Political Ecology. An Emerging Research Agenda in Third-World Studies, in: *Political Geography*, 11, 1, 12–36.
- Cademartori, Jan (2002), Impacts of Foreign Investment on Sustainable Development in a Chilean Mining Region, in: *Natural Resources Forum*, 26, 1, 27–44.
- Centre for Chinese Studies (2006), *China's Interest and Activity in Africa's Construction and Infrastructure Sectors. A Research Undertaking Evaluating China's Involvement in Africa's Construction and Infrastructure Sector Prepared for DFID China*, Stellenbosch, South Africa: Centre for Chinese Studies, online: <[www.icafrica.org/fileadmin/documents/Knowledge/DFID/China%E2%80%99s%20Interest%20and%20Activity%20in%20Africa%E2%80%99s%20Infrastructure%20and%20Construction%20Sectors.pdf](http://www.icafrica.org/fileadmin/documents/Knowledge/DFID/China%E2%80%99s%20Interest%20and%20Activity%20in%20Africa%E2%80%99s%20Infrastructure%20and%20Construction%20Sectors.pdf)> (1 March 2018).
- Cernea, Michael M. (1998), Impoverishment or Social Justice? A Model for Planning Resettlement, in: Hari Mohan Mathur and David Marsden (eds), *Development Projects and Impoverishment Risks Resettling Project-Affected People in India*, Oxford: Oxford University Press, 42–66.
- Cernea, Michael M. (1997), Impoverishment Risks, Risk Management, and Reconstruction: A Model of Population Displacement and Resettlement, in: *World Development*, 25, 1569–1597.
- Choy, Yee Keong (2004), Sustainable Development and the Social and Cultural Impact of a Dam-Induced Development Strategy – the Bakun Experience, in: *Pacific Affairs*, 77, 1, 50–68.
- Cooke, Fadzilah Majid, Johan Nordensvard, Gusni bin Saat, Frauke Urban, and Giuseppina Siciliano (2017), The Limits of Social Protection: The Case of Hydropower Dams and Indigenous Peoples' Lands, in: *Asia & the Pacific Policy Studies*, 4, 3, 437–450.
- Corkin, Lucy, Christopher Burke, and Martyn Davies (2008), *China's Role in the Development of Africa's Infrastructure*, SAIS Working Papers in African Studies No.04-08, The Johns Hopkins University.

- Cramb, Rob (2013), *A Malaysian Land Grab? The Political Economy of Large-scale Oil Palm Development in Sarawak*, LDPI Working Paper 50, The Hague: Institute of Social Studies.
- Cramb, Rob (2007), *Land and Longhouse: Agrarian Transformation in the Uplands*, Nordic Institute of Asian Studies Monograph Series No. 10, Copenhagen: NIAS Press.
- Dinh, Hinh T., Thomas G. Rawski, Ali Zafar, Lihong Wang, and Eleonora Mavroeidi (2013), *Tales from the Development Frontier: How China and Other Countries Harness Light Manufacturing to Create Prosperity*, Washington, DC: The World Bank.
- Dollar, David (2016), *China as a Global Investor*, Asia Working Group No. 4, Washington, DC: The Brookings Institution, online: <[www.brookings.edu/wp-content/uploads/2016/07/China-as-a-Global-Investor\\_Asia-Working-Paper-4-2.pdf](http://www.brookings.edu/wp-content/uploads/2016/07/China-as-a-Global-Investor_Asia-Working-Paper-4-2.pdf)> (1 March 2018).
- Dudgeon, David (2000), Large-Scale Hydrological Changes in Tropical Asia: Prospects for Riverine Biodiversity, in: *Bioscience*, 50, 9, 793–806.
- Edward, Churchill (2016), Sarawak Power on Tap for Investors, in: *The Borneo Post*, 12 September.
- Ekran Berhad (1994), *Privatisation of the Bakun Hydroelectric Project: Environmental Impact Assessment Interim Report*.
- ENS see Environment News Service
- Environment News Service (2012), *Hydro Tasmania to Withdraw From Sarawak Dam-Building Program*, 5 December, online: <<http://ens-newswire.com/2012/12/05/hydro-tasmania-to-withdraw-from-sarawak-dam-building-program/>> (1 March 2018).
- Fearnside, Philip M. (2014), Impacts of Brazil's Madeira River Dams: Unlearned Lessons for Hydroelectric Development in Amazonia, in: *Environmental Science and Policy*, 38, April, 164–172.
- Fearnside, Philip M. (2006), Dams in the Amazon: Belo Monte and Brazil's Hydroelectric Development of the Xingu River Basin, in: *Environmental Management*, 38, 1, 16–27.
- Fearnside, Philip M. (2002), Greenhouse Gas Emissions from a Hydroelectric Reservoir (Brazil's Tucuruí Dam) and the Energy Policy Impacts, in: *Water, Air and Soil Pollution*, 133, 1, 69–96.
- Fearnside, Philip M. (2001), Environmental Impacts of Brazil's Tucuruí Dam: Unlearned Lessons for Hydroelectric Development in Amazonia, in: *Environmental Management*, 27, 3, 377–396.

- Fearnside, Philip M. (1999), Social Impacts of Brazil's Turucui Dam, in: *Environmental Management*, 24, 4, 483–495.
- Fearnside, Philip M. (1997), Greenhouse-Gas Emissions from Amazonian Hydroelectric Reservoirs: The Example of Brazil's Tucuruí Dam as Compared to Fossil Fuel Alternatives, in: *Environmental Conservation*, 24, 1, 64–75.
- Gaveau, David L. A. et al. (2014), Four Decades of Forest Persistence, Clearance and Logging on Borneo, in: *PLOS ONE*, 9, 7, online: <<https://doi.org/10.1371/journal.pone.0101654>> (1 March 2018).
- Global Witness (2013), *In the Future, there will be no Forests Left*, London: Global Witness.
- Harnish, Ryan A., Rishi Sharma, Geoffrey McMichael, Russell B. Langshaw, and Todd N. Pearsons (2014), Effect of Hydroelectric Dam Operations on the Freshwater Productivity of a Columbia River Fall Chinook Salmon Population, in: *Canadian Journal of Fisheries and Aquatic Sciences*, 71, 4, 602–615.
- Heng, Pheakdey (2012), Cambodia–China Relations: A Positive-Sum Game?, in: *Journal of Current Southeast Asian Affairs*, 31, 2, 57–85, online: <<https://journals.sub.uni-hamburg.de/giga/jsaa/article/view/545/543>> (1 March 2018).
- Hensengerth, Oliver (2013), Chinese Hydropower Companies and Environmental Norms in Countries of the Global South: The Involvement of Sinohydro in Ghana's Bui Dam, in: *Environment, Development and Sustainability*, 15, 152, 285–300.
- Herbertson, Kirk (2012), Fooling China's Dam Builders, in: *China Dialogue*, 6 April, online: <[www.chinadialogue.net/article/show/single/en/4860-Fooling-China-s-dam-builders](http://www.chinadialogue.net/article/show/single/en/4860-Fooling-China-s-dam-builders)> (1 March 2018).
- High Court of Australia (1983), *Commonwealth v Tasmania (The Tasmanian Dam Case)*, Brisbane, Australia, online: <[www.ato.gov.au/law/view/print?DocID=JUD%2F158CLR1%2F00004&PiT=99991231235958](http://www.ato.gov.au/law/view/print?DocID=JUD%2F158CLR1%2F00004&PiT=99991231235958)> (1 March 2018).
- House of Commons (2009), *DFID and China: Third Report of Session, 2008-09*, Volume II (Oral and Written Evidence), London: The Stationery Office Limited.
- International Rivers (2014), *China Overseas Dam List*, Berkeley, CA: International Rivers.
- International Rivers (2012), *The New Great Walls: A Guide to China's Overseas Dam Industry*, Berkeley, CA: International Rivers.

- International Tropical Timber Organization (2010), *Annual Review and Assessment of the World Timber Situation: 2010*, Yokohama: International Tropical Timber Organisation.
- Jehom, Welyne (2008), *Development and Displacement: Kenyah-Badeng in Bakun Resettlement Malaysia*, Doctoral Dissertation, University of Bonn, Germany.
- Jomo, Kwame Sundaram, and Chong Hui Wee (2002), *The Political Economy of Malaysian Federalism: Economic Development, Public Policy and Conflict Containment*, Discussion Paper No. 2002/113, World Institute for Development Economics Research, United Nations University.
- Kalipeni, Ezekiel, and Joseph Oppongb (1998), The Refugee Crisis in Africa and Implications for Health and Disease: A Political Ecology Approach, in: *Social Science and Medicine*, 46, 12, 1637–1653.
- Kirchherr, Julian (2017), Conceptualizing Chinese Engagement in Southeast Asian Dam Projects: Evidence from Myanmar's Salween River, in: *International Journal of Water Resources Development*, online first: <<http://dx.doi.org/10.1080/07900627.2017.1322942>>.
- Kirchherr, Julian, Tim Disselhoff, and Katrina Charles (2017), The Interplay of Activists and Dam Developers: The Case of Myanmar's Mega-Dams, in: *International Journal of Water Resources Development*, 33, 1, 1–21.
- Kirchherr, Julian, Tim Disselhoff, and Katrina Charles (2016), Safeguards, Financing, and Employment in Chinese Infrastructure Projects in Africa: The Case of Ghana's Bui Dam, in: *Waterlines*, 35, 1, 37–58.
- Kjøllestadal, Kristian Aamelfot, and Anne Welle-Strand (2010), Foreign Aid Strategies: China Taking Over?, in: *Asian Social Science*, 6, 10, 3–13.
- Lau, Cheng Yong (2015), SCORE: Challenges & Implications in Sarawak's Power Supply Scenario, in: *ARPN Journal of Engineering and Applied Sciences*, 10, 15, 6529–6554, online: <[www.arpnjournals.com/jeas/research\\_papers/rp\\_2015/jeas\\_0815\\_2444.pdf](http://www.arpnjournals.com/jeas/research_papers/rp_2015/jeas_0815_2444.pdf)> (1 March 2018).
- Malaysia Productivity Corporation (2014), *Reducing Unnecessary Regulatory Burdens on Business: Downstream Oil and Gas*, Malaysia: Malaysia Productivity Corporation.

- Matthews, Nathaniel, and Kim Geheb (2015), *Hydropower Development in the Mekong Region: Political, Socio-Economic and Environmental Perspectives*, Abingdon, UK: Routledge, Taylor & Francis Group.
- Matthews, Nathaniel, and Stew Motta (2015), Chinese State-Owned Enterprise Investment in Mekong Hydropower: Political and Economic Drivers and Their Implications Across the Water, Energy, Food Nexus, in: *Water*, 7, 11, 6269–6284.
- Mayer, Jonathan D. (1996), The Political Ecology of Disease as One New Focus for Medical Geography, in: *Progress in Human Geography*, 20, 4, 441–546, online: <<http://journals.sagepub.com/doi/pdf/10.1177/030913259602000401>> (1 March 2018).
- McDermott, Darren, Raphael Pura, and David Wessel (1998), Malaysia's Currency Controls Create Upheaval in the Ranks, in: *The Wall Street Journal*, 3 September.
- McDonald, Kristen, Peter Bosshard, and Nicole Brewer (2009), Exporting Dams: China's Hydropower Industry goes Global, in: *Journal of Environmental Management*, 90, SUPPL. 3, S294–S302.
- McElhinny, Vincent, and Hana Heineken (2013), *World Bank Safeguards & Development Policy: Lending A Primer on Why DPLs Should be Part of the Safeguard Review*, Washington, DC and London: Bank Information Center and Global Witness.
- Mithen, Steven (2012), *Thirst: Water and Power in the Ancient World*, Cambridge, MA: Harvard University Press.
- Mohan, Giles, and Ben Lampert (2013), *Chinese Migrants in Africa: Bilateral and Informal Governance of a Poorly Understood South-South Flow*, paper presented at the UNRISD Conference “Regional Governance of Migration and Socio-Political Rights: Institutions, Actors and Processes”, 14–15 January, Geneva, online: <[http://oro.open.ac.uk/40844/1/Mohan%20and%20Lampert\\_Chinese%20Migrants%20in%20Africa.pdf](http://oro.open.ac.uk/40844/1/Mohan%20and%20Lampert_Chinese%20Migrants%20in%20Africa.pdf)> (1 March 2018).
- Mohan, Giles, and May Tan-Mullins (2009), Chinese Migrants in Africa as New Agents of Development? An Analytical Framework, in: *European Journal of Development Research*, 21, 4, 588–605.
- Morrison, Alastair (1993), *Fair Land Sarawak: Some Recollections of an Expatriate Official*, Studies on Southeast Asia No. 13, Cornell Southeast Asia Program, New York, NY: Ithaca.
- Nissanke, Machiko, and Marie Söderberg (2012), *The Changing Landscape in Aid Relationships in Africa: Can China's Engagement Make a Difference to African Development?*, The Swedish Institute of

- International Affairs (UI papers series), Stockholm, online: <[http://eprints.soas.ac.uk/13323/1/Nissanke-Soderberg\\_UI\\_paper.pdf](http://eprints.soas.ac.uk/13323/1/Nissanke-Soderberg_UI_paper.pdf)> (1 March 2018).
- Nordensvard, Johan, Frauke Urban, and Grace Mang (2015), Social Innovation and Chinese Overseas Hydropower Dams: The Nexus of National Social Policy and Corporate Social Responsibility, in: *Sustainable Development*, 23, 4, 245–256.
- Office of the Chief Minister of Sarawak (2015), *Ground Breaking Ceremony for Huchems Malaysia Project in Kidurong, Bintulu, Sarawak*, Petrajaya: Office of the Chief Minister of Sarawak, online: <[www.cm.sarawak.gov.my/modules/web/pages.php?mod=speeches&sub=speeches\\_view&menu\\_id=&sub\\_id=&nid=11&m=&y=>](http://www.cm.sarawak.gov.my/modules/web/pages.php?mod=speeches&sub=speeches_view&menu_id=&sub_id=&nid=11&m=&y=>)> (1 March 2018).
- Osman, Sabihah (2000), Globalization and Democratization: The Response of the Indigenous Peoples of Sarawak, in: *Third World Quarterly*, 21, 6, 977–988.
- Oxford Business Group (2015), *Sarawak 2015: The Report*, London: Oxford Business Group.
- Palmeirim, Ana Filipa, Carlos A. Peres, and Fernando C. W. Rosas (2014), Giant Otter Population Responses to Habitat Expansion and Degradation Induced by a Mega Hydroelectric Dam, in: *Biological Conservation*, 174, June, 30–38.
- Panda, Jagannath P. (2014), Factoring the RCEP and the TPP: China, India and the Politics of Regional Integration, in: *Strategic Analysis*, 38, 1, 49–67.
- Park, Yoon Jung (2009), *Chinese Migration in Africa*, Occasional Paper No 24, China in Africa Project, January, Johannesburg: South African Institute of International Affairs.
- Peluso, Nancy L. (1993), *Rich Forests, Poor People*, Berkeley, CA: University of California Press.
- Perlez, Jane (2003), Mahathir, Malaysia's Autocratic Modernizer, Steps Down, in: *The New York Times*, 1 November <[www.nytimes.com/2003/11/01/world/mahathir-malaysia-s-autocratic-modernizer-steps-down.html](http://www.nytimes.com/2003/11/01/world/mahathir-malaysia-s-autocratic-modernizer-steps-down.html)> (1 March 2018).
- Pierce, Miles (2007), An Australian Hydroelectric Milestone – The 1895 Duck Reach Power Scheme, in: *Australian Journal of Electrical and Electronics Engineering*, 3, 3, 259–272.
- Povera, Adib (2017), Sarawak Energy Completes Acquisition of Bakun Dam, in: *New Straits Times*, 16 August, online: <[www.nst.com](http://www.nst.com)>

- com.my/business/2017/08/268635/sarawak-energy-completes-acquisition-bakun-dam> (1 March 2018).
- Puah, Chin-Hong, Evan Lau, and Hui-Fern Teo (2012), Assessment of Budget Sustainability in Sarawak, in: *Asian Economic and Financial Review*, 2, 8, 952–965.
- Reuters (2012), Rio Tinto, CMS Scrap \$2 bln Smelter Project in Malaysia, 27 March, online: <[www.reuters.com/article/riotinto-idUSL3E8ER4QK20120327](http://www.reuters.com/article/riotinto-idUSL3E8ER4QK20120327)> (1 March 2018).
- Reuters (2011), Chinalco to Build \$1.6 bln Smelter with Malaysian Tycoon's Firm, 30 April, online: <[www.reuters.com/article/alu-miniumcorpchina-malaysia/chinalco-to-build-1-6-bln-smelter-with-malaysian-tycoons-firm-idUSL3E7FU02W20110430](http://www.reuters.com/article/alu-miniumcorpchina-malaysia/chinalco-to-build-1-6-bln-smelter-with-malaysian-tycoons-firm-idUSL3E7FU02W20110430)> (1 March 2018).
- Rio Tinto (2013), *Why Human Rights Matter*, Melbourne: Rio Tinto.
- Rosa, Luiz Pinguelli, Marco Aurelio Dos Santos, Bohdan Matvienko et al. (2004), Greenhouse Gas Emissions from Hydroelectric Reservoirs in Tropical Regions, in: *Climatic Change*, 66, 9–21.
- Rousseau, Jerome (1994), *The Bakun Project: Review of Socio-Economic Studies and Preliminary Recommendations for the Resettlement of the Kayan and Labanan of the Upper Balui, Report Submitted to the State Planning Unit*, Sarawak, Malaysia: Jabatan Ketua Menteri.
- Sarawak Energy (2010), *Annual Report 2010*, Kuching: Sarawak Energy Bhd.
- Sarawak Hidro, and Sarawak Forestry Corp (2013), *Wimor: Wildlife Monitoring And Rescue Operation At Bakun Hydro Electric Project Flooded Zone*, Kuching: Sarawak Forestry Corporation Sdn Bhd.
- Sawyer, Suzana, and Edmund Terence Gomez (2012), *The Politics of Resource Extraction: Indigenous Peoples, Multinational Corporations and the State*, Houndmills, UK: Palgrave Macmillan.
- Scherer, Laura, and Stephan Pfister (2016), Hydropower's Biogenic Carbon Footprint, in: *PLOS ONE*, 11, 9, online: <<http://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0161947&type=printable>> (1 March 2018).
- Shirley, Rebekah, and Daniel Kammen (2015), Energy Planning and Development in Malaysian Borneo: Assessing the Benefits of Distributed Technologies Versus Large Scale Energy Mega-Projects, in: *Energy Strategy Reviews*, 8, 15–29.

- Sibon, Peter (2012), The Sungai Asap Experience, in: *The Borneo Post*, 29 June, online: <[www.theborneopost.com/2012/06/29/the-sungai-asap-experience/](http://www.theborneopost.com/2012/06/29/the-sungai-asap-experience/)> (1 March 2018).
- Smith, Thomas B. (2003), Privatising Electric Power in Malaysia and Thailand: Politics and Infrastructure Development Policy, in: *Public Administration and Development*, 23, 3, 273–283.
- Sovacool, Benjamin K., and L. C. Bulan (2013), They'll be Dammed: The Sustainability Implications of the Sarawak Corridor of Renewable Energy (SCORE) in Malaysia, in: *Sustainability Science*, 8, 121–133.
- Sovacool, Benjamin K., and L. C. Bulan (2012), Energy Security and Hydropower Development in Malaysia: The Drivers and Challenges Facing the Sarawak Corridor of Renewable Energy (SCORE), in: *Renewable Energy*, 40, 113–129.
- Sovacool, Benjamin K., and L. C. Bulan (2011a), Behind an Ambitious Megaproject in Asia: The History and Implications of the Bakun Hydroelectric Dam in Borneo, in: *Energy Policy*, 39, 9, 4842–4859.
- Sovacool, Benjamin K., and L. C. Bulan (2011b), Meeting Targets, Missing People: The Energy Security Implications of the Sarawak Corridor of Renewable Energy (SCORE), in: *Contemporary Southeast Asia*, 33, 1, 56–82.
- Sovacool, Benjamin K., and Christopher J. Cooper (2013), *The Governance of Energy Megaprojects: Politics, Hubris and Energy Security*, Cheltenham, UK: Edward Elgar Publishing.
- Stanway, David (2012), As Wen Jiabao Departs, China's Dam Plans to Accelerate, in: *Reuters*, 18 November, online: <<http://uk.reuters.com/article/us-china-congress-hydropower-idUSBRE8AH0IP20121118>> (1 March 2018).
- Stonich, Susan C. (1993), *"I Am Destroying the Land!": The Political Ecology of Poverty and Environmental Destruction in Honduras*, Boulder, CO: Westfield Press.
- Strauss, Julia C. (2009), The Past in the Present: Historical and Rhetorical Lineages in China's Relations with Africa, in: *China Quarterly*, 199, 777–795.
- Sun, Yun (2014), *China's Aid to Africa: Monster or Messiah?*, Brookings East Asia Commentary Series, 7 February, online: <[www.brookings.edu/opinions/chinas-aid-to-africa-monster-or-messiah/](http://www.brookings.edu/opinions/chinas-aid-to-africa-monster-or-messiah/)> (1 March 2018).



- Tan, Chee-Beng (2016), It Is Easy When You Are a Christian: Badeng Kenyah Conversion to Christianity, in: *Cultural and Religious Studies*, 4, 4, 254–272, online: <[www.davidpublisher.org/Public/uploads/Contribute/57232a174ee35.pdf](http://www.davidpublisher.org/Public/uploads/Contribute/57232a174ee35.pdf)> (1 March 2018).
- Tan-Mullins, May, and Peter S. Hofman (2014), The Shaping of Chinese Corporate Social Responsibility, in: *Journal of Current Chinese Affairs*, 43, 4, 3–18, online: <<https://journals.sub.uni-hamburg.de/giga/jcca/article/view/797/798>> (1 March 2018).
- Tan-Mullins, May, and Giles Mohan (2013), The Potential of Corporate Environmental Responsibility of Chinese State-Owned Enterprises in Africa, in: *Environment, Development and Sustainability*, 15, 2, 265–284, online: <<https://link.springer.com/content/pdf/10.1007%2Fs10668-012-9409-x.pdf>> (1 March 2018).
- Tan-Mullins, May, Frauke Urban, and Grace Mang (2017), Evaluating the Behavior of Chinese Stakeholders Engaged in Large Hydro-power Projects in Asia and Africa, in: *China Quarterly*, 230, 464–488.
- Thomson, James A. (1985), A Torrent of Words: A Bibliography and Chronology on the Franklin Dam Case, in: *Federal Law Review*, 15, 145.
- Tilt, Bryan, Yvonne Braun, and Daming He (2009), Social Impacts of Large Dams: A Comparison of International Case Studies and Implications for Best Practice, in: *Journal of Environmental Management*, 90, S3, S24–S257.
- Urban, Frauke, and Johan Nordensvard (2014), China Dams the World: The Environmental and Social Impacts of Chinese Dams, in: *E-International Relations*, 30 January, online: <[www.e-ir.info/2014/01/30/china-dams-the-world-the-environmental-and-social-impacts-of-chinese-dams/](http://www.e-ir.info/2014/01/30/china-dams-the-world-the-environmental-and-social-impacts-of-chinese-dams/)> (1 March 2018).
- Urban, Frauke, Johan Nordensvärd, Deepika Khatri, and Yu Wang (2013), An Analysis of China's Investment in the Hydropower Sector in the Greater Mekong Sub-Region, in: *Environment, Development and Sustainability*, 15, 2, 301–324.
- Velaairam, Nanthagopi (2013), *20120726 Briefing on BAKUN HEP*, 13 April, Kuching, Sarawak, Malaysia: Sarawak Hidro.
- Watts, Jonathan (2010), *When a Billion Chinese People Jump: How China will Save Mankind – Or Destroy it*, New York, NY: Scribner.

- Whitehead, Douglas (2014), Chinese NGO–Firm Partnerships and CSR from an Institutional Perspective, in: *Journal of Current Chinese Affairs*, 43, 4, 41–74, online: <<https://journals.sub.uni-hamburg.de/giga/jcca/article/view/799/800>> (1 March 2018).
- Windle, Jill, and Robert A. Cramb (1997), Remoteness and Rural Development: Economic Impacts of Rural Roads on Upland Farmers in Sarawak, Malaysia, in: *Asia Pacific Viewpoint*, 38, 1, 37–53.
- Wolf, Eric (1972), Ownership and Political Ecology, in: *Anthropological Quarterly*, 45, 3, 201–205.
- Yang, Jian (2009), China in the South Pacific: Hegemon on the Horizon?, in: *The Pacific Review*, 22, 2, 139–158.
- Yelery, Aravind (2014), *China’s “Going Out” Policy: Sub-National Economic Trajectories*, Institute of Chinese Studies Analysis No 24, December, Delhi, online: <[www.icsin.org/uploads/2015/04/12/e50f1e532774c4c354b24885fcb327c5.pdf](http://www.icsin.org/uploads/2015/04/12/e50f1e532774c4c354b24885fcb327c5.pdf)> (1 March 2018).
- Yoon, Rowena Dela Rosa (2012), Pressure Mounts on Tasmanian Dam Builder to Quit Sarawak Project, in: *Asian Correspondent*, 4 December, online: <<https://asiancorrespondent.com/2012/12/tasmanian-dam-builder-told-to-get-out-of-sarawak/>> (1 March 2018).

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