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The interplay of activists and dam developers: the case of Myanmar's mega-dams

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ABSTRACT

Scholars investigating activism against large dam developments in Asia usually focus on those campaigning, but not on those the campaigns are aimed at – the dam developers. Yet the developers' perspective is crucial to comprehensively understand the dynamics of social and environmental activism in South-East Asia as well as its implications for the region's energy landscape. This article analyzes the interplay of activists and Chinese dam developers in Myanmar via case studies of the Myitsone Dam and the Mong Ton Dam. The research is based on direct scholarly interaction with both activists and dam developers. It presents evidence of change from both sides: activists have professionalized in recent years; and Chinese dam developers now attempt to engage with civil society, albeit with limited success in the two cases studied. Yet, even with these changes, conflict over dam development persists, and the country may soon face severe limitations on development options for improving energy security. The case of Bhutan is also discussed to illustrate the potential of developing Myanmar's hydropower resources.

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Introduction

A major dam development boom is underway in Myanmar. The country is currently planning to build as many as 45 dams (Brennan & Doring, 2014) to provide energy for its economic development and export; 22 projects with capacity over 10 MW are already operational, according to an energy consultancy. A database maintained by a major NGO in Myanmar indicates that 4 dams are currently under construction, while 11 projects are suspended and 1 has been cancelled. These suspensions and the cancellation have been attributed to massive public protests (Burma Rivers Network, 2013).

Myanmar's Myitsone Dam, in Kachin State, is a key example of this opposition to dam projects. Construction was suspended by the Myanmar government in 2011 in response to a widespread opposition campaign (Lynn, 2011). In 2010, 10 bombs exploded around the dam site, killing at least one Chinese worker (Hadfield, 2014). Additional examples of contested dam projects in Myanmar are the Mong Ton Dam, in Shan State, currently in the planning and design stage (Mang, 2015); the Upper Paunlaung Dam, in Shan State, currently

under construction (Peel, 2014); and the Tamanthi Dam, in Sagaing Region, currently suspended due to opposition from local groups (Burma Rivers Network, 2013).

Scholars have recently focused on activism (including activism against large dams) in South-East Asia. Ford (2013) – considering activism in Cambodia, Indonesia, Malaysia, Myanmar and Thailand – challenges the popular belief that the emergence and success of social activism depends on a considerable measure of democracy. Simpson (2013) echoes this notion, analyzing the cross-border campaign against dams to be built on the Salween River in Myanmar. Meanwhile, Yasuda (2015) describes NGO advocacy strategies chosen against the Xayaburi Dam, in Laos. Such campaigns have led to changes in the way hydropower is viewed by national governments and investors, resulting in novel pathways to electricity security being explored; e.g. Thailand started to look to its neighbours for sources of electricity in the early 1990s (Hirsch, 2010).

While the value of these analyses for understanding activism against large dams in South-East Asia is undisputed, these analyses may also be considered partial, as the research has mostly investigated only those running the campaigns, not those the campaigns are aimed at. These latter are usually dam developers. Chinese developers particularly dominate the industry nowadays; one of those developers, Sinohydro, claims to construct every second dam worldwide (Verhoeven, 2015, p. 178). Almost no articles investigate the views of Chinese developers on social impact, the social impact assessments conducted or sub-contracted by them, or the resettlement schemes implemented in their projects (Kirchherr, Pohlner, & Charles 2016b).

The few articles investigating this topic are, for the most part, not based on direct interaction with Chinese dam developers and additional relevant private-sector players. For instance, Middleton, Garcia, and Foran (2009) discuss trends and players in dam development in the Mekong River basin. However, not a single dam developer was interviewed. Hensengerth (2015) analyzes the adherence of Sinohydro to various environmental norms in construction of Cambodia's Kamchay Dam. He also did not interview the firm in question. Lamb and Dao (2015) – analyzing, among other things, the Chinese engagement in Myanmar's Hatgyi Dam – at least interviewed a consultant involved in the project. (Articles based on direct interaction with Chinese dam developers are Nordensvard, Urban, and Mang, 2015; Kirchherr, Disselhoff, & Charles, 2016a).

Direct scholarly interaction with activists as well as dam developers and additional relevant private-sector players is key in order to comprehensively understand the dynamics of social and environmental activism in South-East Asia as well as its implications for the region's energy landscape. The aim of this article is to present such research. For this purpose, the authors draw on more than 150 semi-structured interviews carried out during field research in Myanmar, Thailand and Singapore from June to August 2015 and in Myanmar in March 2016; interviews carried out at the 2015 World Hydropower Congress in Beijing in May 2015; and telephone interviews conducted from April to August 2015. These interviews may constitute the most comprehensive qualitative data-set currently available on the topic at hand. Given the sensitive nature of the topic, all interviewees were assured anonymity. Thus, all interviews are coded.¹

Snowball sampling was employed to recruit interviewees. This approach is frequently necessary when conducting research under less-than-optimal conditions (Cohen & Arieli, 2011, p. 423). More formal sampling approaches were tried initially, but envisaged interviewees would not respond to any reach-outs. For instance, an e-mail reach-out to

approximately a dozen Chinese dam developers yielded zero replies. The seeds of the eventual snowball sample were recruited via the professional networks of the authors, developed prior to this research, a common approach in snowball sampling (Heckathorn, 2011, pp. 356ff.; Miller & Brewer, 2003, pp. 278ff.). The sample was terminated when additional interviews yielded limited or no novel insights (thematic saturation – O'Reilly & Parker, 2012, pp. 192ff.). The data collected were organized in NVivo 11, with all interviews coded according to a set of predefined themes, e.g. 'Myitsone Dam campaign'. The resulting clusters were then reviewed and analyzed by the authors. Coding on additional sub-themes was conducted, if appropriate.

Via this data-set the interplay of Chinese dam developers and activists opposing large dams was analyzed in two case studies: the Myitsone Dam (6000 MW), a project suspended in 2011 after public protests, with no decisions taken to date about its future; and the Mong Ton Dam (7000 MW), currently in the environmental and social impact assessment (ESIA) phase, with progress currently being interrupted by public protests. These are the two largest dam projects in Myanmar.

The remainder of this article is organized as follows. In the next section, the development and contestation of the Myitsone Dam project are discussed – from the perspective of the key activists involved in the project as well as China Power Investment Corporation (CPI), the dam developer. This project is then compared to the Mong Ton Dam project. The subsequent discussions focus on likely ramifications of the current dynamics between Chinese dam developers and activists for Myanmar's energy landscape as well as lessons from dam development in Bhutan for Myanmar. The argument is summarized in the final section.

The case of Myanmar's Myitsone Dam

The Myitsone Dam project, currently suspended, was being developed by CPI and Asia World, a Burmese dam developer, allegedly one of Myanmar's most successful construction and trading companies, which is "owned by regime crony Steven Law" (U. S. Embassy, 2007, 2011). Basic information and the timeline of the project are depicted in Figure 1. The exact starting point of this project, the largest of seven dam projects to be developed in Kachin State (Figure 2), is contested. Villagers reportedly already reached out to the various Kachin ceasefire groups in January 2004 – three years prior to the signing of the memorandum of understanding – asking them to stop the project (KDNG, 2007). But this was rebutted by an international donor, who argued that the campaign against the dam was initiated and led not by the resettled communities but by local ethnic-aligned organizations in Kachin State (FI8 – for interview sources, see Table 1). Yet resettles in the Aung Myin Thair relocation camp (hosting those displaced due to the Myitsone Dam) reported having taken part in demonstrations against the project close to the Myitsone Dam site early on (FAA1; FAA2; FAA3; FAA5).

The Kachin Development Networking Group (KDNG), the Rural Reconstruction Movement Organization and the Kachin Public Youth Organization were particularly instrumental in the early days of the protests, according to interviews conducted for this article (with KDNG's role particularly highlighted – FNL21). Various international NGOs, most notably International Rivers, were seemingly only prominent in the protests after the project had been suspended (International Rivers, 2013).

The early campaign against the Myitsone Dam entailed various components, ranging from research and spiritual protests to the collecting of signatures, as well as petitions.

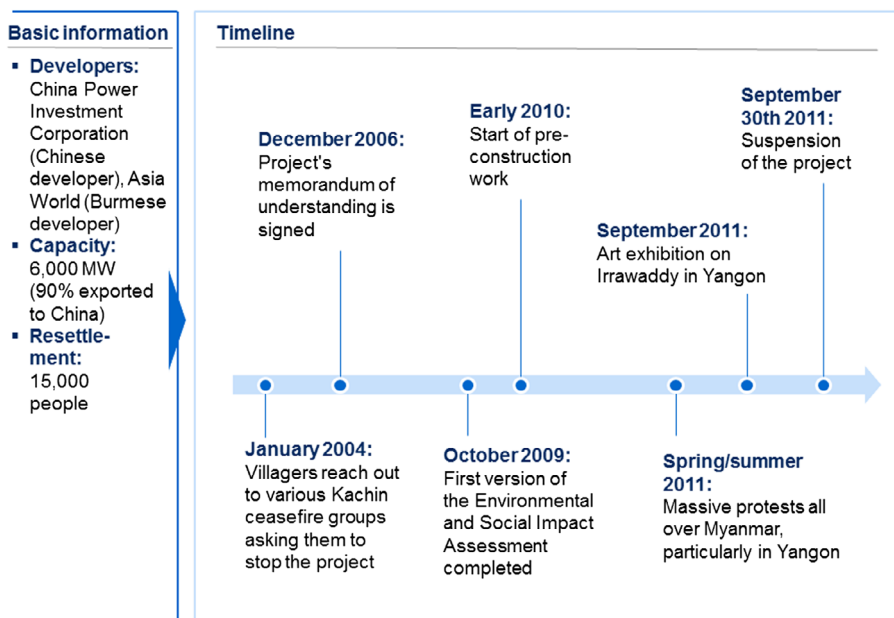


Figure 1. Basic information and timeline of the Myitsone Dam Project.

Source: Data from *Journal of Current Southeast Asian Affairs* (2012); KDNG (2007); TP21 (see Table 1).

Notably, both research reports by KDNG (2007, 2009) were published while Myanmar's military regime was still in place. During these times, also, "mass prayer ceremonies [were] held along the river banks and in churches up- and downstream" (KDNG, 2009, p. 1). In addition, various songs on the cultural significance of the Irrawaddy River, to be dammed because of the Myitsone Dam project, were released (FNL6). A three-day exhibition on the beauty of the Irrawaddy River was launched in an art gallery in Yangon in 2011, and mentioned as a significant part of the campaign (FI8, FNL6); the project was suspended six days after the end of the exhibition (Lynn, 2011). Activists had collected 10,000 signatures against the dam all across the country prior to its suspension (FNL3). These signatures and petitions were regularly submitted to key decision makers such as the chairman of the State Peace and Development Council, Myanmar's governing military regime (KDNG, 2007).

Instruments relevant in the campaign against the Myitsone Dam may sound similar to those employed by NGOs in Europe or the United States. Nevertheless, this campaign may not be comparable to most campaigns carried out by Western NGOs. There was no suggestion from interviewees that this campaign was centrally planned and coordinated. Rather, various groups undertook a variety of initiatives – sometimes complementary, sometimes overlapping – against the Myitsone Dam. The resulting campaign was disjointed, but with all groups seemingly united by a single cause: to stop the dam project.

The campaign against the Myitsone Dam was operated by local Burmese NGOs on minimal budgets and with limited staff. For instance, KDNG's annual budget varies between USD 30,000 and USD 50,000; the organization currently counts 12 employees; 10 are full-time and 2 are volunteers (TNL17). As a comparison, CPI, the lead developer constructing the Myitsone Dam, has already spent USD 800 million on the project, according to its calculations (Lwin, 2015), and has approximately 140,000 employees (CPI, 2015). At first sight, one may be tempted to

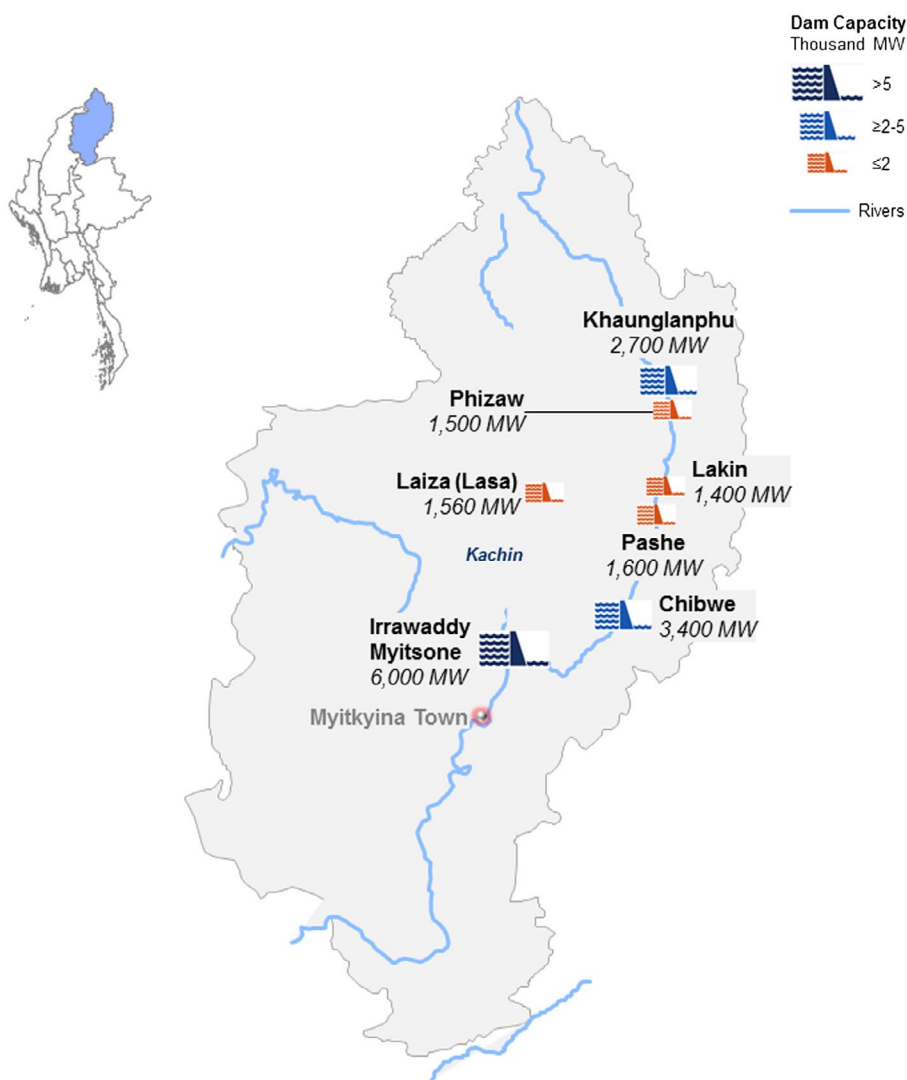


Figure 2. Major dams planned for Kachin State.

Source: KDNG (2016).

portray those national civil society organizations advocating against CPI as a classic David-versus-Goliath scenario. One activist interviewed suggested that CPI probably did not take their organization seriously in the beginning (FNL6). Meanwhile, it was suggested by a former employee of a Chinese dam developer that CPI acted cautiously as they “wanted to use Myitsone as their branding project to evidence they know how to do projects overseas” (TP24).

Initially, CPI believed that their key stakeholder would be the Burmese government in Naypyidaw, the capital of Myanmar. “The Chinese just spectacularly miscalculated the entire situation. They did not understand that those folks in Naypyidaw have no legitimacy whatsoever in Kachin State”, an international donor told us (TI7). “It is a key habit of Chinese enterprises to always follow the government’s instruction”, a former employee of a Chinese dam developer said in explaining the company’s approach (TP24). This was also confirmed by a Chinese dam developer involved in a project in Laos (OP3).

Table 1. Interview overview.

#	Interviewee	Organization	Code
1	Scholar	Thai university	TA4
2	Doctoral researcher	Major Chinese university	FA6
3	Scholar	University in the United Kingdom	FA7
4	Scholar	University in the United States	FA8
5	Scholar	University in Asia	OA9
6	Pastor	Aung Myin Thair relocation camp	FAA1
7	Resettlee	Aung Myin Thair relocation camp	FAA2
8	Resettlee	Aung Myin Thair relocation camp	FAA3
9	Resettlee	Aung Myin Thair relocation camp	FAA5
10	Senior official	Kachin Independence Organization	FG7
11	Senior official	International donor	TI7
12	Senior official	International donor	FI8
13	Senior official	International donor	TI9
14	Senior staff	International NGO	TNI1
15	Senior staff	International NGO	TNI3
16	Managing director	German foundation in Myanmar	FNI12
17	Staff	International NGO in Myanmar	FNI13
18	Director	German foundation in Myanmar	FNI17
19	Staff	International NGO in Myanmar	FNI19
20	Environmental activist	South-East Asian NGO	TNL1
21	Leading activist	Burmese NGO	FNL3
22	Activist	Involved in various anti-dam movements in Myanmar, especially against the Myitsone Dam	FNL4
23	Activist	Burmese NGO	TNL5
24	Activist	Involved in anti-Myitsone Dam protests, now working for international NGO	FNL6
25	Activist	Involved in various anti-dam protests in Indonesia	FNL7
26	Staff	International NGO operating in Myanmar	FNL9
27	Managing director	International NGO operating in Myanmar	FNL10
28	Leading activist	Major Burmese NGO	FNL12
29	Managing director	Major NGO in Myanmar	FNL14
30	Leading activist	Kachin NGO	TNL17
31	Activist	Kachin NGO	FNL21
32	Activist	Kachin NGO	FNL23
33	Staff	Chinese dam developer	OP3
34	Senior leader	Chinese dam developer	OP10
35	Staff	Major ESIA consultancy	OP15
36	Environmental lawyer	Freelancer	FP16
37	Consultant	Engineering firm	TP17
38	Managing partner	Major global strategy consulting firm	TP18
39	Manager	Consulting firm in Myanmar	FP19
40	Spokesperson	Chinese dam developer	TP21
41	Managing director	Competitor of SMEC in Myanmar	FP23
42	Former employee	Chinese dam developer	TP24
43	Managing director	Investment firm in Myanmar	TP25
44	Managing director	Major Burmese dam developer	TP26
45	Consultant	Involved in various dam projects in Myanmar	FP28
46	Consultant	Energy consultancy	FP30

The Burmese government not only lacked legitimacy in Kachin State, but would also not provide any definitive instructions on environmental and social safeguards. Indeed, definitive requirements on conducting an ESIA in Myanmar were introduced only in January 2016 (ADB, 2016). Myanmar's legislative environment upon the start of the project was novel to CPI. China has multiple ESIA requirements in place, including "relatively strong laws governing resettlement" (International Rivers, 2012, p. 25); impact mitigation in China is solely the responsibility of the provincial and district-level government, while in Myanmar the dam developer bears significant responsibility (TNI1).

CPI involved two institutions in the ESIA, a Burmese NGO, the Biodiversity and Nature Conservation Association (BANCA), and the Changjiang Institute of Survey, Planning, Design and Research (CISPDR), a Chinese high-tech state-owned enterprise (Mang, 2011). Dam developers frequently hire local players – including NGOs – to compensate for the lack of local networks in the new countries they are operating in, a seasoned management consultant explained (TP18). The lead contractor for the ESIA was CISPDR. The combination of CISPDR and BANCA could not fend off criticism, though, possibly due to the quality of the ESIA. When the ESIA was reviewed in 2013 by a panel of Burmese and international experts, initiated by International Rivers, the panel found “serious deficiencies and flawed conclusions” in the report (International Rivers, 2013, p. 1).

An alleged deficiency of the ESIA process was that no involvement of local communities took place (KDNG, 2007; FG7); the resettlement process was reportedly even carried out using intimidation by military authorities (KDNG, 2009, p. 5; FAA3; FAA5). These statements were partly contradicted by a former employee of a Chinese dam developer: “They [CPI] had consultations with the villagers telling them what compensation they would get. But they did not reach out to the media or civil society” (TP24).

It is difficult to ascertain the factual basis for these events. The Myitsone Project remains non-transparent on various dimensions, but particularly opaque are the contractual arrangements between CPI and the Burmese government on financial agreements regarding the sale of electricity. Once the dam is completed, 90% of the electricity generated via the Myitsone Dam is supposed to be exported to China’s Yunnan Province (Deetes & Mang, 2015), in exchange for an estimated USD 500 million annually (KDNG, 2007). However, the contract between the government and CPI has not been published (FNL4; TP21).

Activists (FNL3) as well as observers (TI7) were surprised by the decision to suspend work on the Myitsone Dam on 30 September 2011. The managing director of a consultancy in Yangon observed that “Myanmar had been nothing but China’s client state. The suspension just did not fit into this picture” (FP19).

The majority of those interviewed view the suspension as a symbolic gesture, “the visible starting point of Myanmar’s change process”, according to an international donor (TI7). This change process has been comprehensively discussed by Bhattacharjee (2014), Cheesman, Skidmore, and Wilson (2012) and Southwick (2014). An activist argued that the government “wanted to give evidence that they are now listening to the people” (FNL12). “The new government had only been in power in eight months. The decision to suspend the Myitsone project unleashed a wave of sympathy. It was the first time in many decades that those in power responded to the people”, an international donor said (FI8). This narrative was largely endorsed by a former employee of a Chinese dam developer: “The government wanted to send a signal. The Myitsone Dam project suspension was a scapegoat” (TP24).

It was suggested that as a result of the public protests and resulting suspension CPI changed its approach to managing stakeholders. “They used to only talk to the central government. Now they are inviting us to discuss”, an activist in Kachin State acknowledged (TNL17). “You need to address also civil society when developing dams. We need to explain to the public that these projects are for Myanmar”, a spokesperson of a Chinese dam developer said (TP21).

To institutionalize this altered stakeholder management approach, CPI established a public relations unit in Myitkyina upon the suspension of the dam (FNL4), providing an opportunity to build and maintain relations with various relevant players. “It is not very professional,

though. There is no evaluation system to monitor what their PR work has achieved”, a former employee of a Chinese dam developer said (TP24).

CPI also claims it will now adhere to the most ambitious environmental and social safeguard policies. The standards of the World Bank and the Asian Development Bank serve as a reference for the various Chinese-led dam projects in Kachin State, a spokesperson of a Chinese dam developer said (TP21). This would include significant benefit-sharing – a claim that was contested by a Burmese dam developer (TP26).

“Only upon the suspension of the Myitsone Dam, CPI understood that there is a public opinion with influence in Myanmar”, a former employee of a Chinese dam developer told us (TP24). Doubts remain, though, whether CPI has truly changed more than its approach to public relations. A Chinese scholar researching the Myitsone Dam project told us that “you should not listen to what the Chinese say, you should look at what the Chinese do” (FA6). Indeed, no evidence was found that the compensation scheme for those resettled was improved upon the suspension of the Myitsone Dam project. Rather, resettleds suggested that compensation payments are irregular (FAA2, FAA5). Furthermore, no additional information on arrangements regarding the purchasing of power by China were shared. “CPI is still among the worst companies operating in Myanmar from a corporate social responsibility perspective”, an activist claimed (FNI13).

The case of Myanmar’s Mong Ton Dam

The contrasting case in this analysis is the Mong Ton Dam, a project currently being delayed by public protests in the ESIA phase. Basic information and the timeline of the Mong Ton project are depicted in Figure 3. The project is the largest of seven dam projects to be developed on the Salween River in Myanmar (Figure 4) and the largest dam project ever planned for mainland South-East Asia (Mang, 2015). The reputation of IGE, the Burmese dam developer on the project, may be as questionable as Asia World’s (FNL14). A US diplomatic cable published by WikiLeaks states that those running IGE “use their family connections and close ties to the regime to amass great wealth” (Martov, 2012). China Three Gorges Corporation (CTGC), a major Chinese state-owned dam developer (IHA, 2016) and the lead developer of the Mong Ton project, probably teamed up with IGE to fulfil legal obligations; a Burmese partner is still required for foreign companies in most business endeavours (Turnell, 2014, pp. 185ff.). However, finding solid business partners remains a challenge in Myanmar (Stevens, 2013). CTGC, in turn, was hired for this project since only Chinese dam developers would be able to develop projects of such a scale, a consultant noted (FP28).

A comparison of the approaches chosen by activists and the dam developers of the Myitsone and Mong Ton projects is provided in Table 2. The instruments employed in the campaign against the Mong Ton Dam – e.g. research, spiritual protests and the collecting of signatures and petitions – seem to be similar to those of the Myitsone Dam Campaign. However, international players have been involved since the early days of the campaign, which is probably a consequence of Myanmar’s opening-up since 2011 and the resulting multiplication of connections between local and international NGOs (Ghoshal, 2013, pp. 117ff.). For instance, a scholarship programme has been launched, facilitated by a researcher at a Thai university and a German foundation, through which (*inter alia*) staff in NGOs based in Myanmar collect data regarding the Mong Ton project (TA4; FNI17). Prayer ceremonies to stop the dam development have been taking place since April 2015 (Save the Salween

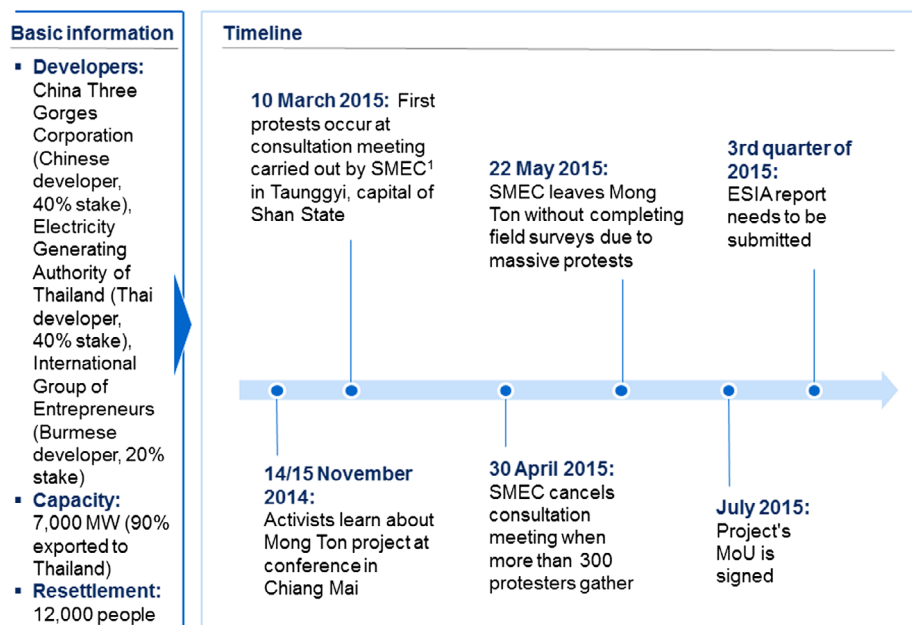


Figure 3. Basic information and timeline of the Mong Ton Dam Project.

Note: Australian firm, sub-contracted by Chinese university.

Sources: FNL14 (see Table 1); Karen News (2015); Mang (2015); Thongrung (2015).

Network, 2015). Those leading the current campaign against the Mong Ton Dam have professionalized compared to the Myitsone Dam campaign. Some 131 civil society organizations in Myanmar have signed a pledge to stop the Mong Ton Dam project. In addition, Burma Rivers Network (2015) claims that 61,000 signatures have been collected, compared to 10,000 signatures for the Myitsone Dam project (FNL3). An appeal to stop the project has been sent to the Chinese and Thai governments, as well as Myanmar Electric Power (Burma Rivers Network, 2015). Such professionalization is a key trend among local NGOs in Myanmar's these days; it is fuelled by capacity-building efforts and additional funding provided by international NGOs, according to Bächtold (2015, pp. 1978ff.). No figures regarding campaign budget or staff could be obtained for comparison with the Myitsone Dam campaign because a collective, not just a single organization, is involved in the Mong Ton campaign. Due to the multitude of players involved and additional funding available from international NGOs, it is assumed that the Mong Ton Dam campaign is on a sound financial footing, compared to the Myitsone Dam campaign.

Activists have been able to significantly disrupt the project already during the ESIA process, possibly a result of the professionalization. No such interruptions were reported at this stage of the Myitsone Dam project. SMEC, a professional services firm carrying out the ESIA for the Mong Ton Dam project, argued that it would be too dangerous to return to the villages in question since the United Wa State Army, an ethnic-minority army, clashed with government troops in Mong Ton in June 2015 (Mizzima, 2015; SMEC, 2016; OP15). These fights are related to the project, according to the Shan Human Rights Foundation (2015). SMEC's ESIA report was supposed to be submitted in the third quarter of 2015. No press articles could

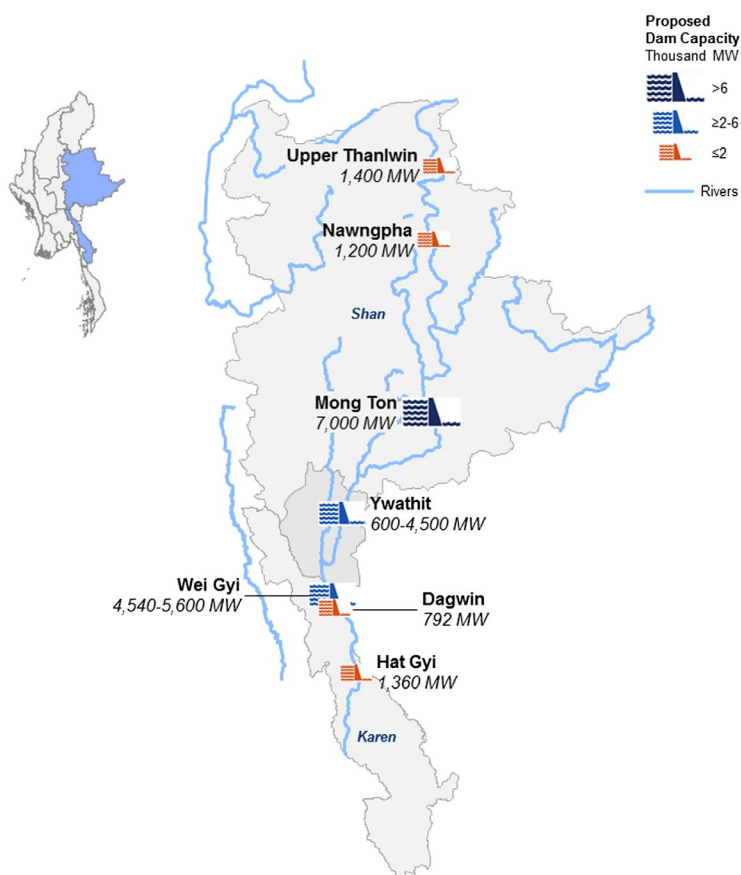


Figure 4. Major dams planned for Shan and Karen States.

Source: Burma Rivers Network (2015).

be identified, though, that indicated that the ESIA report has been submitted. As of this writing, the latest news on the project website is from April 2015, when the ESIA scoping meeting was held (CTGC, 2016).

The campaign against the Mong Ton Dam may be somewhat detached from the impacted communities – just as the campaign against the Myitsone Dam eventually became. “The regular people could not raise their voices during these [consultation] meetings. The civil society organizations hijacked them”, a Burmese staff working in an international NGO claimed (FNL9). A consultant involved in the project confirmed this (OP15).

“Anti-dam civil society groups are very experienced [now]. They have very good experts for lobbying, working with the media and public consultation. They are much better organized than dam developers in Myanmar”, a former employee of a Chinese dam developer argued (TP24). However, the approach of Chinese dam developers has also evolved in recent years to include not just the government but also impacted communities and civil society.

These changes may be seen as (at least partly) a response to the suspension of the Myitsone Dam. “This suspension was a really painful punch in the stomach [for the Chinese dam industry]. They learnt it the hard way”, senior staff in an international NGO said (TN13).

Table 2. The Myitsone and Mong Ton Dam projects – comparing approaches of activists and Chinese dam developers.

	Myitsone Dam project	Mong Ton Dam project	Change
Activists	No centrally planned and coordinated campaign, various overlapping activities	Centrally planned and coordinated campaign, supported by 131 civil society organizations (CSOs)	Major
	Limited campaign budget and staff	Currently sufficient campaign budget and staff	Major
	Research on project carried out by CSOs, spiritual activities, petitions, collection of 10,000 signatures	Research on project carried out by CSOs, spiritual activities, petitions, collection of 61,000 signatures	Some
	Campaign overall possibly somewhat detached from impacted local communities, at least at later stages of the protests	Campaign overall possibly somewhat detached from impacted local communities	None
	Involvement of international players only upon suspension of the project	Involvement of international players already during early stages of project	Major
	Activists united by the single goal to stop the project	Activists united by the single goal to stop the project	None
	Project disrupted significantly only upon beginning of construction	Project disrupted significantly already during the ESIA process	Major
Chinese dam developer	Hiring Chinese player (CISPDR) and Burmese NGO (BANCA) to carry out ESIA	Hiring international player (SMEC) to carry out ESIA	Some
	Partnering with a Burmese dam developer of questionable reputation (Asia World)	Partnering with a Burmese dam developer of questionable reputation (IGE); also partnering with a Thai dam developer (EGAT)	Some
	Initially only engaging with relevant government officials, attempting to engage with civil society only upon suspension of the project	Attempting to engage with relevant government officials and civil society from the very beginning	Major
	World Bank and Asian Development Bank ESIA standards supposedly now reference point for project	World Bank ESIA standards adopted during ESIA process, according to SMEC	None
	Contested whether consultation process was carried out at all	Consultation process carried out, but process severely criticized	Some
	Contractual arrangements regarding project not published	Contractual arrangements regarding project not published	None

Notes: The Change column summarizes the authors' assessment regarding differences between the Myitsone and Mong Ton Dam projects in the activist campaign or dam developer project management approaches. This assessment was conducted for various elements of these approaches, as outlined in the table above. ESIA = environmental and social impact assessment.

A former employee of a Chinese dam developer (TP24) and an international donor (TI7) confirmed this reasoning. As a consequence of the Myitsone Dam suspension, Chinese state-owned enterprises overall would now look at investments in Myanmar from a risk management perspective, an NGO activist explained (TNL1); the developer's assumption would be that communication with various players reduces the likelihood of significant anti-dam protests. Indeed, a Chinese dam developer argued that communication would be key to overcoming public opposition (OP10).

This novel approach has not mitigated protests, though. Indeed, SMEC issued a press release in July 2015 regarding the Mong Ton project admitting that its "participative, inclusive and transparent consultation process with civil society organizations [has had] limited success" (Mizzima, 2015).

A key reason for this limited success may be the goal uniting those players opposing the Mong Ton Dam project. "SMEC can do the very best public consultations in the world. We

actually don't care. We just don't want this dam to be built", a leading activist of the campaign said (FNL12).

A second reason for this limited success may be inadequate consultation processes. "SMEC's consultations are entirely insufficient. The first consultation was only two hours. You cannot discuss anything in two hours. And they announced this consultation via a tiny ad in one of the last pages of the newspaper" (FNL12). The activist also reported that military authorities in Shan State sent a tank through the villages "to remind them to participate in the consultations" (FNL12). Pictures of the tank were shown to one of the authors of this article. This is again a parallel to the Myitsone Dam project, which reportedly also relied upon intimidation by military authorities (KDNG, 2009, p. 5).

Criticism regarding the ESIA process was raised not only by activists but also by a competitor claiming that SMEC would not contextualize its ESIA approach to Myanmar (FP23). It was stated by a consultant that SMEC complies with World Bank standards (OP15).

Until now SMEC is the player taking most of the public heat in the Mong Ton Dam project. "This is very much the approach these [Chinese dam developer] players take nowadays. They try to outsource as much as possible, especially when it comes to ESIA's. They hire an international player, they give him a stack of cash and then they say: 'Now you go and deal with this ESIA topic'", an environmental lawyer said (FP16). This delegation is also a necessity, though, for credibility, a management consultant noted (TP18); activists would probably not acknowledge an ESIA which was not carried out by a (presumably) independent consultancy but by the project's developer.

Myanmar's future energy landscape

"Back in 2010 even the most outspoken environmentalists were afraid to say what they think when in Myanmar", an activist told us (FNL7). However, the country has transformed in only a few years. "Myanmar has a vibrant civil society today. You can't tell anyone to shut up", an interviewee from a German foundation in Myanmar told us (FNI12). Many of those interviewed reported that civil society in the country is not very constructive or compromising, though. "NGOs in this country are just opposing anything – particularly when it comes to dams", the director of an NGO in Myanmar said (FNL10). Staff from a German NGO in Myanmar agreed with this judgement, but argued that local NGOs' attitude was understandable given the repression activists suffered under the military regime (FNI17).

The position of civil society is likely to be further strengthened in the near future. A novel association law was adopted in 2015 outlining registration procedures for NGOs as well as rules regarding membership (FNL23). "This is the most liberal association law in all of South-East Asia, maybe even all of Asia", an interviewee from a German foundation in Myanmar claimed (FNI12). The legislation introduced, providing a legal framework regarding environmental and social safeguards for dam construction in Myanmar, was called "not complete, but a good start" by a Burmese dam developer (TP26). The legislation's focus is on environmental safeguards. More on social safeguards will be added in the first iteration, a social impact assessment consultant claimed (FP23).

Given these developments, many activists interviewed were confident regarding the impact of their campaigns. "I think many more dams will be suspended in the near future", a Burmese activist told us (TNL5). "It has certainly been a trend for the last two years that the population was shouting very loudly against hydropower", said a Chinese dam developer

(TP21). Nevertheless, the dam developer remains optimistic, indicating that he believed that the seven dam projects in Kachin State would be completed within the next 15 years; “Opposition has started to weaken again” (TP21). A former employee of a Chinese dam developer argued, though, that this optimism may only be pretended: “CPI has pulled most of their employees out of Myanmar. All they are trying to do is to get their money back” (TP24). An investor confirmed that CPI may exit the Burmese market (TP25). Indeed, there has been a standstill of Chinese investments in Myanmar’s power sector ever since the suspension of the Myitsone Dam (Lamb & Dao, 2015, p. 11).

Policy makers from Myanmar’s previous government were keen to develop hydropower, although very little is known about the incoming National League for Democracy government’s stance on the issue. Seemingly, the previous government was looking for partners beyond China regarding hydropower development. In a presentation at the World Hydropower Congress in May 2015 in Beijing, Min Khaing of Myanmar’s Ministry of Electric Power called upon dam developers interested in Myanmar to “bring the best hydropower development practice” (Khaing, 2015, p. 10). This would mean to “commit to acceptable environmental and social impact”. No Chinese (or Thai) investor was explicitly mentioned in the presentation, only several European investors (e.g. Andritz and EDF) that had just launched projects in Myanmar (Khaing 2015, p. 9). Whether projects implemented by European players adopting benchmark environmental and social safeguard standards truly face less public opposition than Chinese-led projects remains to be seen, and this research has not attempted to answer this question, focusing only on dam projects led by Chinese players.

Myanmar needs to develop more sources of electricity to meet the growing demand. Only 49% of households have electricity connections, with urban areas at 89% compared to 28% in rural areas (FP30). The country’s electricity demand is growing at 12% annually (FP30), with Myanmar’s maximum demand projected to increase from 2.4 GW in 2014 to up to 14.5 GW in 2030 (Khaing, 2015, p. 5). Development of hydropower may be one avenue to satisfy this demand, as Myanmar’s 108 GW of hydropower potential is tremendous (FP30). The Irrawaddy River is considered to have the most hydropower potential (47%), followed by the Salween River (38% – FP30).

Many activists interviewed do not absolutely oppose hydropower. However, they prefer small dams with supposedly limited impacts powering Myanmar over large dams with significant impacts powering neighbouring countries (TNL17). Some scholars argue, though, that small dams may not be as sustainable as large dams. First, environmental impacts from a river basin perspective may exceed those of large dams, particularly with regard to habitat and hydrologic change (Kibler & Tullos, 2013). In addition, in order to produce significant amounts of power, a series of small dams must submerge more land than a single large dam (OA9). This may also imply significant resettlement. Awareness of the negative impacts of small dams is limited among both scholars and practitioners nowadays (FA8); a lack of knowledge regarding the social impact of small dams was corroborated by a recent meta-synthesis (Kirchherr et al., 2016b).

Furthermore, the ability of small dams to provide adequate sources of energy is not supported by Myanmar’s Ministry of Electric Power. They have identified 210 potential sites with a capacity of less than 10 MW each. However, the combined installed capacity of these sites would amount to only 232.5 MW, 0.2% of the country’s total large hydropower potential (Oo, 2012). Myanmar will need to add up to 1000 MW of capacity each year until 2030 if

current demand growth trends continue (TI9). Even if all the small hydropower potential were developed, it would not be sufficient to power Myanmar's economy (Figure 5).

The veracity of the estimates provided by the Myanmar's Ministry of Electric Power may be questionable, though. "Of course, you can divert parts of a large river via a run-of-the-river plant to generate electricity. I would call this small hydropower", an engineer said (FA7). These vast discrepancies between Myanmar's small and large hydropower potentials (0.2 GW versus 108 GW) may indicate that the potential for small hydropower on Myanmar's large rivers is not accounted for yet. Definitional confusion regarding small hydropower may also explain this gap. An independent study would answer questions that could help verify Myanmar's overall small-hydropower potential. But even if it is found to be vast, questions regarding its sustainability will remain, and a public policy discussion is needed as to whether the country wishes to take this route.

Alternative forms of energy to meet Myanmar's needs are limited. Myanmar's proven fossil fuel potential is "modest" (The Economist, 2014): 50 million barrels of oil, 283 billion m³ of natural gas and 540 million tons of coal of low calorific value (FP30). Myanmar's renewable energy potential beyond hydropower is also limited. For instance, only 3400 km² (0.5% of the country's total area) features wind speeds high enough for modern wind turbines (ADB, 2015, pp. 59ff.). Furthermore, 96 sites with geothermal potential have been identified – the total potential remains unknown. Similarly, its biomass potential is unknown. Yet solar may offer significant potential. Initial studies suggest that Myanmar's solar potential may stand at 52,000 TWh/y – 5000 times the current annual energy demand (FP30). A forthcoming study by an international NGO particularly highlights Myanmar's solar potential (FNI19). Investors interested in energy in Myanmar these days are already most keen to explore its

State/division	Small hydropower (< 10 MW)		2030 Demand (MW)	Maximum contribution of small hydropower to 2030 demand (%)
	Installed	Total potential		
Kachin	6.4	51.4	185	28%
Shan	15.3	76.2	355	21%
Chin	3.0	8.0	90	9%
Tanintharyi	0.3	24.5	290	8%
Kayin	0.1	11.3	165	7%
Sagaing	1.3	19.0	349	5%
Magwe	0	10.4	293	4%
Mon	0.2	12.7	418	3%
Rakhine	0	4.0	243	2%
Bago	2.0	4.9	646	1%
Mandalay	4.5	9.8	2,731	0%
Kayah	0.1	0.4	162	0%
Ayeyarwaddy	N/A	N/A	406	N/A
Yangon	N/A	N/A	8,209	N/A
Total	33.2	232.5	14,542	

Figure 5. Small hydropower in Myanmar.
Source: Data from Khaing (2015); Oo (2012).

solar resources (TP17). However, more detailed studies are needed to verify this assumed potential.

Myanmar's dams: lessons from Bhutan

Large hydropower remains Myanmar's only significant verified potential source of energy. The case of Bhutan may offer valuable lessons for Myanmar on how to reap this potential. Twenty-five years ago, Bhutan was a subsistence economy, with one of the lowest GDPs per capita, one of the shortest life expectancies and the smallest per capita electricity consumption in the world (Dhakal, 1990, p. 291). Today, its GDP per capita is twice Myanmar's (World Bank, 2015b), its average life expectancy has risen by 15 years, to 68 years (World Bank, 2015c), and three-quarters of its population have access to electricity (World Bank, 2015a).

Hydropower has been recognized as the key driving force for the economic development of the country (Tshering & Tamang, 2004, p. 1). Ninety-nine per cent of Bhutan's electricity is from large hydroelectric plants (CIA, 2015), and revenue from the sale of electricity to India contributes 40% of the country's fiscal revenues (Kumar Singh, 2013, p. 460). Furthermore, hydropower accounts for 25% of Bhutan's GDP, and hydropower infrastructure development another 25% (Ogino & Hamanaka, 2011, p. 1).

Bhutan has commissioned 5 large hydroelectric plants so far, with a total capacity of 1480 MW, as well as 21 small run-of-the-river hydroelectric projects (up to 10 MW) with a total capacity of 8.8 MW (UNIDO/ICSHP, 2013). As a comparison, Myanmar has a developed hydropower capacity of 3151 MW (Khaing, 2015, p. 3). Bhutan's largest dam, the 1020 MW Tala Dam, was completed in 2007. This dam helped raise Bhutan's GDP per capita from USD 1346 in 2006 to USD 1755 in 2007, a 30% increase (Figure 6). Only surplus power is exported to India, because the Tala Dam is required to meet all domestic energy demands first (International Rivers, 2015) – not all of Bhutan is electrified yet because of a lack of grid development (UNIDO/ICSHP, 2013). More step-change projects will be completed in Bhutan soon. For instance, the 1200 MW Punatsangchhu-I ought to start operations in 2018 (International Rivers, 2015). Overall, six more hydroelectric plants are under construction in Bhutan, and five more have been proposed. Bhutan's overall technically exploitable hydropower potential stands at 24 GW (22% of Myanmar's total potential), of which only 6% is currently exploited (Ulmasova, 2013, p. 6). If all ongoing projects are completed on time, the hydropower sector is expected to contribute 75% of Bhutan's fiscal revenues by 2020 (Bisht, 2012, p. 788).

India is Bhutan's key partner in its hydropower development (Bisht, 2012). If more steps are taken towards an integrated South-East Asian electricity market, India, Thailand and China could become Myanmar's key partners in its hydropower development. Indeed, Myanmar's tremendous hydropower potential could also become a significant source of revenue for the Burmese government if exported to its neighbouring countries. Admittedly, the hydropower development Myanmar would need to undertake to establish hydropower as a significant source of governmental revenue is much more massive than any developments to be undertaken in Bhutan. After all, Bhutan is a much smaller country, with a population of only 0.8 million, compared to 53.4 million in Myanmar (World Bank, 2015d).

The question of utilizing Myanmar's hydropower potential as an engine for development must be a public policy issue, to be debated and decided by the political representatives and the people of Myanmar. If this potential is developed, dam development contracts must

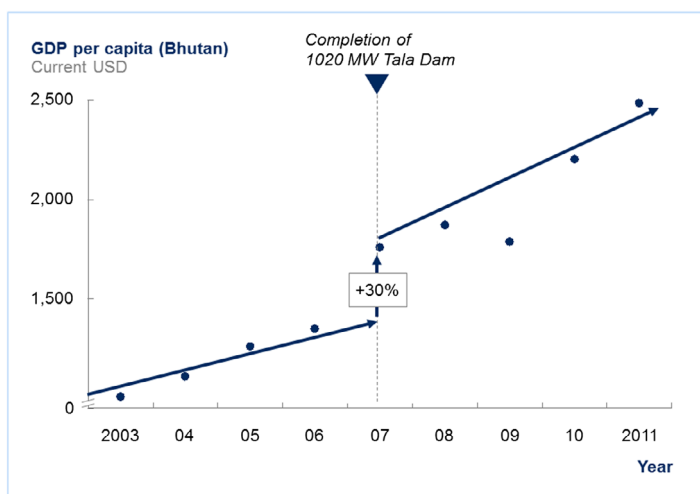


Figure 6. Economic impact of Bhutan's Tala Dam.
Source: World Bank (2015b; 2016).

be transparent, and making resettled communities as well as those upstream and downstream whose livelihoods are impacted by large-scale hydropower development the first project beneficiaries is mandatory; it is the golden rule of sustainable large dam development. Hence, projects such as the Myitsone Dam and the Mong Ton Dam must be renegotiated, and even possibly eventually abandoned. Adhering to international best-practice environmental and social safeguard standards is probably not enough to follow this golden rule of sustainable large dam development. "It is not about standards, it is about local language. You need to understand: What is the life of those you are impacting? How do they feel and think about their future? It is all about contextualization", a Burmese dam developer told us (TP26). It is this contextualization that is so often missing in the development of, contestation over, and analysis of large-scale hydropower in Myanmar.

Conclusion

"Until the 1970s, it was generally assumed that large dams overwhelmingly contributed more benefits to the society [than] costs" (Biswas, 2012, p. 5). Indeed, "fifty years ago, the main challenges to large infrastructure projects were technical or scientific. Today, the greatest hurdles faced by such projects are almost always social" (McAdam et al., 2010, p. 401). Public protests are delaying large infrastructure projects all around the world. This seems to hold true particularly for hydropower, "perhaps the first sector impacted by the trend" (p. 402). According to Plummer (2013), extensive resettlement issues are now the second-greatest concern of dam developers regarding possible cost and schedule overruns.

Scholars have investigated those advocating against dam projects, but usually not those the campaigns are aimed at – the dam developers. Understanding the developers' perspective and approach is crucial to illustrate the interplay of activists and dam developers and its implications regarding the future developments of a country's and region's energy landscape. Investigating this interplay has been the key aim of this article. For this purpose, two case studies were analyzed – the Myitsone Dam project and the Mong Ton Dam project,

Myanmar's two largest projects. Myanmar is a particularly interesting country to study – it has a hydropower potential of 108 GW, of which less than 3 GW (<3%) is currently developed (FP30).

There is evidence that Myanmar's activists have professionalized in recent years. The campaign against the Myitsone Dam in 2010 was rather chaotic. The current campaign against the Mong Ton Dam is more centrally planned and already supported by 131 civil society organizations. International players have been involved in the campaign from the very beginning. The activists are united by a single goal – to stop the project – and were able to significantly disrupt it as early as during the ESIA process. Meanwhile, CTGC hired an international player, SMEC, to help with the ESIA process – which was carried out adhering to international standards, especially prioritizing engagement with civil society, according to SMEC (2015). However, the success of this engagement has been limited so far. A reason may be that the consultation process was insufficient (according to some activists). Other activists were found to fundamentally oppose the dam project irrespective of the safeguards in place.

Activists in Myanmar are likely to continue professionalizing, while some may remain uncompromising in their opposition to large dam projects. This may lead to a large-dam deadlock for Myanmar. According to the interviews conducted for this article, CPI, responsible for the Myitsone Dam project, is considering exiting the Burmese market. Western players may step in, but it remains to be seen whether their projects will face less public opposition. Myanmar is confronted with an energy deficit. Many activists call for the development of small hydropower to meet this gap; however, additional analyses are needed to quantify the potential of small hydropower and its environmental and social impacts. Besides hydropower and solar power, Myanmar does not seem to hold significant energy resources.

Hence, considering the development of Myanmar's large hydropower resources remains necessary. The case of Bhutan illustrates the potential of developing these resources. Hydropower contributes 40% of Bhutan's annual fiscal revenues. Electricity export revenues could also contribute significantly to Myanmar's governmental budget if its excess capacity is developed.

The negative social and environmental impacts of large dams can be significantly mitigated, "given the present knowledge and experience on planning and management practices" (Tortajada, 2015, p. 405). However, implementing these practices remains a major challenge (Leung, Zhao, Ballesteros, & Hu, 2013). If more large dams are to be built in Myanmar, dam developers, activists, political leaders and local communities must collaborate to minimize adverse social impacts on local communities. International safeguards must be in place. Schemes are needed that make those resettled as well as those upstream and downstream that are also adversely impacted by the project the first beneficiaries of a project. This is the golden rule of sustainable dam development – a rule which could bring together all stakeholders in Myanmar to find responsible and mutually acceptable energy solutions.

Note

1. This article is part of a larger research project investigating various socio-economic impacts of dams which has been reviewed and approved by the University of Oxford's ethics committee. More than 150 semi-structured interviews have been carried out for this project to date. Interview partners are international donors, policy makers, scholars, consultants,

dam developers (including Chinese dam developers) and NGOs, as well as adversely affected communities. Only those interviews used in this article are listed in Table 1.

Interviews were carried out during field research in Myanmar, Thailand and Singapore from June to August 2015 as well as in Myanmar in March 2016, at the 2015 World Hydropower Congress in Beijing in May 2015 and via telephone from April to August 2015. Given the sensitive nature of the topic, all interviewees were assured anonymity. Thus, all interviews are coded, with the first letter indicating the mode of interview (T for telephone, F for face to face, O for online survey/e-mail), the second indicating the type (A for academia, AA for adversely affected people, G for government, I for international donor, NI for international NGO, NL for local NGO, P for private sector), and the sequence of numbers indicating the overall interview number within a type.

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