

Nepal's Water, the People's Investment? Hydropolitical Volumes and Speculative Refrains

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Enacting the Hydropower Future: '10,000 MW in 10 Years'

Stuck in traffic on the way to the Power Summit in December 2016, we decided to get out of the taxi and walk. The way to Bouddha was a giant construction site: the road was being widened and trenches were being dug to accommodate the new pipes of the long-promised Melamchi drinking water project (Rest 2019). Pipes were stacked alongside the road, their inert immensity materializing the muddy promise of Nepal's imagined infrastructural futures. Walking along the road, we passed the camp at Pasang Lhamu Chowk for people displaced by the 2015 earthquake, a labyrinth of plastic tarps caked with dust. Eighteen months after the 2015 earthquake, several hundred people still lived here just outside the gate of the Hyatt, the ritzy enclave where the 2016 Power Summit was being held. Passing the security checkpoint and its queue of SUVs awaiting entry, we walked up the long green driveway to the hotel. Prayer flags and signs for the Power Summit were hung rhythmically along the way, repetitively affirming the event slogan '10,000 MW in 10 Years'.

Upon reaching the hotel, we turned left in the atrium and descended down a broad set of stairs into the separate event hall. Quickly, the neoclassical Nepalese architectural style of the hotel gave way to a fluorescent hallway adorned with the logos of institutional and corporate sponsors – a spectacular gateway to the hydropower future. As we entered the cavernous ballroom, the programme abruptly

began with an intensely affective opening salvo. First, there was a short video that summarized the history of hydropower in Nepal and framed the potential of the current historical moment: scenes of the 2015 earthquake and the resilient people of Nepal, the historic promulgation of Nepal's Constitution in late 2015, the fuel crisis triggered by the 'unofficial blockade' of India against Nepal that followed, and recent promises made by the current government. Reaching a crescendo, the video welcomed us all to the 2016 Power Summit and formally introduced the bold goal of installing 10,000 MW of hydroelectric generation capacity in the next ten years – '10,000 MW in 10 Years'. The assembled crowd rose as a former Miss Nepal invited Prime Minister Puspha Kamal Dahal to formally inaugurate the Summit. After he gave a short speech, a troupe of child performers were herded onto the stage, each dressed in the traditional clothing of a different ethnic group, to sing the national anthem. This series of prospective performances was meant to set the mood and focus our attention – to enact an affective atmosphere of anticipation and to mobilize a coherent, rousing, realizable and united vision of Nepal's hydropower future perfect.

For decades, the Nepalese government and the hydropower sector, often in concert with the Western donor community, have presented hydropower development as Nepal's only way out of the club of Least Developed Countries. Narratives about hydropower development in Nepal are typically constructed in terms of two main themes: the immense possibilities for development offered by the natural water resource endowment of Nepal and the longstanding failure to realize that dream.¹ The bright future and the dark past are typically mentioned in the same breath. Amid the recursive patterns of hype and hope that animate Nepal's hydropower sector, a series of common affective refrains recur, such as nationalist assertions that 'not one drop of water should flow beyond Nepal's borders without creating wealth'. During the previous Power Summit of 2013, one speaker invoked a moral duty to develop hydropower resources, highlighting the need to prevent 'an entire generation from growing up in the dark'. Reflecting broader patterns of hydronationalism, these visions of the hydropower future are 'structured through contested notions of progress, emancipation, and betterment' (Swynge-douw 1999: 449). Thus, after more than a century of hydropower development efforts, the country has arrived at the Power Summit 2016, animated by the continuous repetition of a new spectacular refrain – '10,000 MW in 10 Years' – itself an upgraded refrain of previous proclamations.



Figure 3.1. Government officials and hydropower developers discuss future paths to 10,000 MW during the final session of the Power Summit, December 2016. © Austin Lord.

Spectacular Refrains

Spectacular events like the Power Summit generate and maintain a sprawling economy of anticipation organized around the promise of Nepal's hydropower future, popularly understood as a dream deferred. These events coordinate oratorical and prospective practices focused on claiming Nepal's hydropower future, reproducing a discursive regime that emphasizes both the liminality of the present and the abundance of the imagined resource future.

Over the years, these performances and re-enactments of future prosperity have become rhythmic *refrains*, a discursive tool for coordinating an assemblage of territorial motifs, spatializing state practices and affective orientations to the future (Merriman and Jones 2017: 604). These refrains, often articulated as planning goals, reproduce and amplify the authority of the state apparatus and its 'state effects' (Abram and Weszkalnys 2011). Refrains enable larger resource-making projects, inscribing the current or future value of resources (realized or unrealized) in collective social imaginaries. As state-sponsored refrains circulate, they seek to establish discursive

hegemony. Consider, for example, the way in which practically every citizen has been made aware that Nepal has an estimated 83,000 MW of hydropower generation capacity – a calculation from 1966 that has remained unchallenged, despite the lack of reliable hydrological data on most river systems. ‘This figure, known to almost any schoolchild, is repeated endlessly in the media as Nepal’s passport out of poverty. It is equally well known that more than half a century of effort by various Nepali governments, its giant neighbours and international aid agencies have not produced the imagined cornucopia’ (Dixit and Gyawali 2010: 107). As new and old refrains circulate, they enhance a public sense of infrastructural enchantment (Harvey and Knox 2012) and inculcate a hopeful and hydrological form of national ‘resource affect’ (Weszkalnys 2016). Nepalis are told that the hydropower future is close at hand, that *bikas* (development) is flowing right by their homes, going to waste.

In this chapter, we consider the shifting contours of the imaginative terrains enacted by events like the Power Summit, focusing on the recent popularization of ‘the shareholder model’ of hydropower development in Nepal. Contemporary state ambitions to capitalize the hydropower frontier, we argue, are best understood through the speculative slogan ‘Nepalko Paani, Janatako Lagaani’, which translates as ‘Nepal’s water, [the] people’s investment’. While several states have presented ‘people-centred’ hydropower development discourse in the past, Nepal is a unique case where citizens are being summoned as *shareholders*: to purchase publicly traded equity in hydropower companies (IFC 2018; Lord 2016, 2018). In recent years, as popular investment in hydropower companies has increased across Nepal, this phrase has emerged as an important nationalist refrain that indexes the speculative and affective energy of the contemporary hydropower frontier.

We argue that the discursive ascendance of the ‘Nepalko Paani, Janatako Lagaani’ (NPJL) refrain speaks to a double process of securitization: both a material effort to *secure* Nepal’s hydrologic volumes through dam construction, and a concerted financial attempt to *securitize* those volumes by translating them into publicly-traded securities in which Nepal’s citizens can invest. Building from previous analyses of the ways in which nation-states attempt to create territory by ‘securing volumes’ (Elden 2013) and the ways in that claims to volumes are tangled up in claims to sovereignty, we examine the ways in which the NPJL trope, understood as a state-sponsored refrain, seeks to reconfigure the relationships between the Nepalese state, the hydrologic volumes it seeks to accumulate, capital and the

various publics of Nepal. As we will show, these attempts to enact and claim futures are all essentially concerned with questions of security and volume: the control of different kinds of volumes with different qualities.

In the first two sections of the chapter, we consider the emergence of the NPJL refrain and the way in which it interacts with other volumetric claims on Nepal's hydropower future. Drawing from participant observation conducted at a variety of hydropower sector events, interviews with representatives from the hydropower sector, and content analysis of contemporary political discourse, we examine how and why this concept has gained discursive momentum among broader Nepali publics.

Building on the work of other scholars who have demonstrated that 'the affective dimensions of resource-making projects also saturate people's conceptions of time and the future' (Ferry 2016: 185; Ferry and Limbert 2008), we show how the phrasing of NPJL captures a particular configuration of infrastructural ambitions at a critical moment in the broader history of hydropower in Nepal. Critically, while highlighting the ways in which dreams of becoming a 'hydropower nation' (Lord 2016) have long circulated in Nepal, we do not seek to reify the Nepalese state or the 'hydropower nation' as a real and coherent entity; instead, we highlight the ways that the refrains of hydropower development serve as a method for enacting a coherence that the Nepalese state lacks. We argue that NPJL has become a central discursive device, used to enact and implement a new set of relations between the state and its citizens. On the one hand, it postulates a right to ownership of national natural resources for its citizens, while, on the other hand, it turns reinvesting individual financial assets into them into a civic duty.

In the third section, we follow the NPJL refrain to two national-priority hydropower project sites in the Arun and Tamakoshi watersheds. Drawing on long-term ethnographic research conducted in the project-affected areas of the Arun-3 and Upper Tamakoshi hydropower projects (both currently under construction), we consider the ways in which NPJL is understood by the differently positioned project-affected populations that might also be 'local investors'. While hydropower development often resembles Ferguson's (1990) anti-politics machine, we show how the refrain of NPJL creates a new field for the practice of politics, enabling a variety of different volumetric claims on Nepal's hydropower future. As refrains circulate, they can take on a life of their own, as the state is speaking to 'a number of different audiences who hear different things; and who,

in repeating what the state says to still other audiences, changes the words, tones, inflections, and meanings' (Roseberry 1994: 365). Reflecting on the polysemic qualities of NPJL, we ask how do other publics – the varied body of citizens, stakeholders and potential investors – relate to the NPJL idea? In what ways are the people of Nepal reformulating this refrain in their own terms?

Finally, we highlight the ways in which state-sponsored efforts to 'secure the volume' through hydropower development are complicated by a variety of *unsecured* volumes and flows. Infrastructures are constantly being made and unmade. After several years conducting research on hydropower development in Nepal, we are acutely aware of the fact that Nepal's imagined hydropower frontier is anything but stable; rather, the entanglement of complicated geology, hydrological uncertainties, seismic risk, geopolitical volatility, and logistical and bureaucratic challenges continue to trouble dreams of a secure hydropower future (Butler and Rest 2017; Huber 2019; Lord 2017, 2018). The presence of these unsecured volumes also complicates the financial narratives of shared wealth creation that drive the proliferation of the shareholder model of hydropower development. By highlighting the repeated emergence and unruliness of unsecured volumes, we highlight the uncertainty and contingency of the imagined hydropower future.

Securing Future Volumes

Nepal is a small nation often referred to as 'a yam between two boulders' or 'a mouse between two elephants', which shares its rivers with China and India. The government is particularly keen to lay claim to water resources flowing within its borders and to export electricity to markets in nearby India and Bangladesh. To make this dream a reality, Nepali citizens are being called on to invest in hydropower development, which is presented as a national initiative towards energy security, socioeconomic development, and geopolitical self-determination. As the government, the hydropower sector, development agencies, foreign diplomats and the media reiterate the value of Nepal's hydropower resources, Nepal's water volumes are popularly imagined as an untapped reservoir for future wealth.

In recent years, scholars have shown a growing interest in moving beyond two-dimensional representations of sovereignty and to

define territorial ambitions in terms of volumes. As Elden (2017) recently stated: 'Often focused on state borders, territory more properly extends through the fabric of the state and can only be grasped as volume.' Critical studies of 'waterscapes' have long argued that territorial contestations over volumes are particularly pertinent in the context of water, and analysed the shifting relations between water, technology and the nation-state (Baviskar 2007; Menga and Swynedouw 2018). For South Asia, colleagues have discussed nationalist framing of water management (Gyawali 2003; Klingensmith 2007; Rademacher 2011) and highlighted the reasons why water is a particularly challenging volume to control (Anand 2017; Björkman 2015; D'Souza 2006). Most recently, scholars have turned their attention to contestations over 'volumetric sovereignty', which can generate new forms of turbulence as different flows interact (Lord 2019; Billé 2019, 2020). Nationalist ambitions and volumetric uncertainty are both particularly intense in Nepal, given the relative economic scale of Nepal's hydropower resources and the intense uncertainty of Himalayan hydrology.

While Nepal has long been interested in developing its hydropower resources, in recent years the Nepalese government has demonstrated an increasing interest in securing Nepal's 'energy sovereignty' and in developing new strategies to capitalize its largely unrealized hydropower frontier. These trends were evident at the 2016 Power Summit, which gathered the most important players of the private hydropower industry and the public sector together with the ambassadors of the most influential foreign powers, and a few foreign experts, to discuss a variety of contemporary issues and future scenarios. Throughout the Power Summit, participants engaged in elaborate games of 'counting up the future' by listing their favourite projects, adding their capacity and reassuring each other that 10,000 MW was an ambitious number, but was not impossible. Like earlier exercises undertaken to ascertain the 83,000 MW of the hydropower future, we understand this game as a kind of 'geo-metrics' (Elden 2013), a process of knowing and calculating potentiality of territory. But what kind of hydrologic and financial volumes need to be secured in order to generate '10,000 MW in 10 Years'?

'10,000 MW in 10 years' is also a volumetric claim on the future: as a mandate to develop the infrastructure required to harness water volumes capable of generating 10,000 megawatts of hydroelectric power. As all Nepalis are aware, this will take billions of dollars and mountains of concrete. Articulated in a single refrain, this statement

puts forth a headline number and a time horizon, while at the same time referencing a series of similar targets that have been uttered in the past. In this chapter, our analysis highlights the cascade of uncertainties this speculative refrain conveniently elides or occludes. Even in the event of reaching the stated goal, it is in no way clear what 10,000 MW would mean in terms of actual electricity produced. Technically, the number refers to an installed capacity, which is a statement of potential; this potential is shaped by and directly dependent on the seasonality of water and flow in Nepal.²

In short, Nepal is highly dependent on its rivers for its production of electricity, and yet the volume of those rivers fluctuates dramatically. Due to the monsoons – the dominant weather system in South Asia that brings perennial struggles with ‘unruly waters’ (Amrith 2018) – about half of the annual precipitation typically falls over just fifteen days, while there is hardly any rain at all in the eight months between October and May. For hydropower companies, this creates a huge discrepancy between potential summer production of electricity and the ‘firm energy’ that can be produced on a normal day in December. Critically, climate change will also have considerable effects on the flow regimes of Nepal’s rivers as the timing of the monsoons becomes increasingly unstable and the contributions of melting glaciers, often referred to as ‘the water towers of South Asia’, fluctuate (Immerzeel et al. 2010; Wester et al. 2019). Critical voices are increasingly pointing out how climatological and hydrological changes pose a risk to Himalayan hydropower (Dixit 2019; Huber 2019). Climate change therefore brings both new challenges for states looking to secure water volumes and new narratives of urgency that can be used to justify efforts to store volumes and control over the timing of flows.

In the following sections, we consider the rise of a new technique for underwriting Nepal’s hydropower future: tapping into ‘domestic capital’ and encouraging the citizens of Nepal to invest in the making of the imagined hydropower nation through the rapid proliferation of the ‘shareholder model’ of hydropower development, exemplified by the emergence of two initiatives to create citizen shareholders. Focusing on the NPJL refrain and the various people and things it attempts to choreograph, we ask how exactly is *paani* (water) being conceptualized in this new project? What efforts are being undertaken to secure and regularize watery volumes? And who exactly are the *janata* (people) whose investments will be leveraged to build the imagined hydropower nation?

Popular Speculation: The 'Nepalko Paani Janatako Lagaani' Refrain

As the citizens of an imagined 'hydropower nation', Nepalis are represented within multiple frames of subjectivity by multiple state and private sector actors – as political subjects longing for development, as electricity users whose patterns of future energy consumption must be accounted for, as 'project-affected people' who must bear the impacts of future-making projects and as project stakeholders who will share the benefits of hydropower development. Since the 2000 World Commission on Dams, globally circulating questions about 'corporate social responsibility' and 'benefit sharing' in the hydropower sector have become significant in Nepal (Dixit and Gyawali 2010; Shrestha et al. 2016). As debates about the appropriate models for 'benefit sharing' in Nepal's hydropower sector continue, a new and financialized kind of subjectivity has become increasingly prominent: the Nepali as a citizen shareholder of the hydropower future.

Critically, we are not talking about the idea of being a 'shareholder' in the abstract. In January 2019, when we began writing this chapter, nearly one million Nepalis had bought shares in a variety of hydropower companies – twenty-three hydropower companies are now publicly listed on the Nepal Stock Exchange and another thirty-five companies have filed to conduct initial public offerings (ShareSansar 2019). This trend began when the Chilime Hydropower Company created the 'shareholder model' of hydropower development in 2010 – a funding modality that emerged from prolonged negotiations with project-affected locals, created significant wealth for Chilime shareholders and established a critical precedent in Nepal's hydropower sector (Lord 2016: 154–56). The result was the birth of a new model of hydropower governance that has rapidly proliferated throughout Nepal, wherein 15% of company shares are offered to the general public and 10% of shares are offered to local, 'project-affected populations'.³

After decades of indeterminacy, many Nepalis living in the vicinity of hydropower projects are understandably interested in the prospect of 'becoming an agent of *bikas* [development] rather than one of its targets' (Pigg 1992: 511) by participating in what is sometimes referred to as a 'public-private-people partnership'. In the district of Rasuwa, there are more people who purchased shares in the 2010 Chilime offering than people who voted in the national elections of 2013. Local Chilime shareholders often speak glowingly about the

opportunity to claim the rights, recognition and share of company profits accorded to shareholders, and hope for future opportunities to invest. As this popular reorientation of hydropower subjectivities continues, a new and speculative frontier of aspiration has emerged.

As an attempt to expand the shareholder model to the scale of the nation-state, the NPJL concept references a complex assemblage of other ideas about resource governance, energy security, sovereignty, shareholder capitalism and citizenship. Further, while the shareholder model emerged in a socioeconomic and political context specific to Nepal, one could also argue that it reflects a global trend where governments and their corporate allies seek to encourage the ‘productive involvement of the citizens of resource-rich countries in the creation of resource wealth’ (Weszkalnys 2016: 140).

Writing about the experiences of people waiting for a future oil economy to arrive in São Tomé and Príncipe, Weszkalnys introduced the concept of ‘resource affect’, suggesting that state and corporate resource-making efforts to materialize resource futures focus ‘no longer simply on macroeconomic issues and elite politics but on the purported hopes, desires, and aspirations of citizens in producer states’ (Weszkalnys 2016: 161). In Nepal, we argue, the ‘shareholder model’ of hydropower development is also a machine for generating, modulating and coordinating resource affect, a means of summoning domestic capital to invest in the hydropower frontier. Tellingly, the NPJL trope first emerged in response to an ‘energy emergency’: as the slogan of an ambitious ‘crisis management plan’ that bundled together an array of policy reforms focused on removing barriers to rapid hydropower development. Despite debates over the exact causes of the energy scarcity and disagreements over the scale of future electricity demand, both the state and private actors see the current situation as an energy crisis.

In October 2015, less than six months after Nepal was struck by a 7.8 magnitude earthquake and a few weeks after the promulgation of a long-awaited new constitution, an ‘unofficial blockade’ took shape along the Nepal–India border, causing a protracted fuel crisis in Kathmandu (Jha 2015). During the four months that the blockade was in place, post-earthquake reconstruction work was significantly compromised, infrastructure projects came to a halt and the denizens of Kathmandu were forced to wait in line for days to get petrol. These experiences of energy scarcity and the significant economic losses associated with the blockade dredged up painful memories of a similar geopolitical scenario in 1989. As anxieties about energy insecurity mixed with nationalist discourse about the need for Nepal’s

'energy sovereignty', the hydropower sector called on the Nepalese government to declare an 'energy emergency'.

In February 2016, just after the blockade ended, the Nepalese government declared a national energy crisis (for the fourth time in eight years) and announced a 'National Energy Crisis Reduction and Electricity Development Decade'. Using affective rhetoric to highlight chronic insecurities and threats, the state and its corporate allies invoked a moral and pre-emptive narrative of security and drafted an official ten-year plan organized around two highly aspirational goals: providing electricity to every household and helping every Nepali become a shareholder with claims to national hydropower wealth. This plan reconfigured existing hydropower policy and sought to secure the hydropower frontier as a space open for investment. Tellingly, this plan reclassified hydropower sites as 'restricted areas' and allowed private contractors to deploy state security forces in response to 'obstruction from political parties and locals' (*Kathmandu Post* 2016), creating a state of exception. Supported by affective crisis narratives, these interventions were clearly intended to 'secure the volume' of imagined future hydropower wealth. This effort was part of a double securitization: to promote investment and to stake a claim to project sites.

Organized under the official slogan NPJL, these territorializing efforts and the exercise of state power were justified by using both classic ideas about the greater good and the logic of shareholder capitalism. The slogan was meant to: (a) re-enact the imagined communities of the hydropower nation; (b) imply that state intervention was necessary to protect future shareholder value and secure returns on investment; and (c) promote and coordinate popular investment in the dream of energy sovereignty. Like all good state refrains, it sought to choreograph the actions and affective orientations of the citizenry and it was intended to be, in many ways, a self-fulfilling prophecy (Merriman and Jones 2017).

The intensity of the shareholder trend became even more apparent in January 2017 when the Ministry of Energy launched an online crowdfunding platform also called 'Nepalko Paani Janatako Lagaani', raising the equivalent of US\$1.5 million in its first three days. This initiative, intended to target both Nepali citizens residing in Nepal and those living abroad, also sought to tap into the populist appeal of citizen shareholder ship. The fact that the proposal did not specify which projects would be funded and did not provide any details on the terms of the investment speaks of the speculative exuberance of the moment. For two years, we did not see any updates on

the scheme. Recently, the media reported that the programme ‘was aborted midway after collecting investment commitments from the public’ (*Repubblica* 2019), while describing a new campaign by the same name (see below). This campaign and its successors are an attempt by the Ministry of Energy to cash in on a bubble, but they also speak of a broader set of efforts to summon Nepalis to invest in their *own* hydropower development.

As an effort to reconfigure the relationship between Nepalese citizens and ‘Nepal’s water’, this speculative refrain is both a resource-making project and a scale-making project. As a coordinated programme designed to create a nation of hydro-investors, it is simultaneously a technique of governance that seeks to conduct the conduct of citizens using ‘technologies of imagination’ (Bear 2015; Sneath et al. 2009), an anti-political statement about the correct and best use of water resources that reflects classic developmental logic, and an aspirational ethos.

In the end, this is not about Nepal’s water, but about power (electric, governmental and discursive) and subjectivity. In this case, hydraulic territories are the object to which the state and the private sector turn their attention, but the potential investors of Nepal are the subject. As Abram and Weszkalnys (2011: 10) have suggested, planning processes often reduce diverse publics to an abstract ‘quasi-individual’ that is the target or subject of projects of improvement and future-making – ‘the public is often treated as though it were an empirical entity, when it is better imagined as being called into existence in the planning moment’. But who exactly are the diverse publics here?

Going Upstream: A Tale of Two Rivers

Case 1: The Arun-3 Project

So far, the majority of people eligible for buying ‘local’ shares at the hydropower frontier are members of indigenous groups and ethnic minorities living in mountainous and formerly remote ‘project-affected areas’ – people who have been occupying the margins of the Nepalese state, both geographically and socially, since its so-called ‘unification’ in the late eighteenth century. Only the recent boom in work migration to places like the Arab Gulf has provided some within these communities with money to spare. To date, most places in the Nepali hills and mountains severely lack investment options; without a road and electricity, it is difficult to buy things. People long

for the material flows associated with *bikas* (development) and the amenities (*savidha*) these entail.

This sense of extended waiting for development is very graspable in the upper Arun Valley of eastern Nepal (Rest 2012). This is because a road was promised to 'arrive' here in 1992 in order to access the construction site of the Arun-3 hydropower project – a national priority project that has been on the horizon ever since. The Arun has a large trans-Himalayan catchment area that generates a far higher minimum volume than other rivers in Nepal. For this reason, it has long been one of the most important and promise-laden sites on Nepal's imagined hydropower frontier, despite its remote location. However, even for the Arun River, there is no reliable hydrological data (personal communication, Katalyn Voss, 28 February 2018). For a few years now, an Indian developer has been paying local people to keep track of the amount of water passing through the village of Phyaksinda at the proposed dam site for the Arun-3 hydropower project. This flow data is critical to assess the project and its potential, and so (unsurprisingly) the company's employees are reluctant to share their records.

While the rivers of Nepal are full of unbuilt hydropower dams, Arun-3 is by far the most famous of them. Originally identified as the best site in the whole Kosi basin by a Japanese feasibility study and taken up by a consortium of Western donors in the 1980s, the project was cancelled in 1995 after the World Bank got into trouble with the global anti-dam movement. Subsequently, the Bank stopped all hydropower funding. In 2008, the Nepalese government signed a Memorandum of Understanding with Satluj Jal Vidyut Nigam (SJVN), an Indian state-owned public service undertaking to construct the project. This was one of the first actions of the transitional government right after the end of the decade-long armed conflict between the state and the Maoist People's Liberation Army.

The design of the current project is practically identical to the previous iteration, except for one major difference that again brings us back to seasonal volumes and volumetric politics: the installed generation capacity will be bumped up from 400 MW to 900 MW. In light of the vast contractual differences between the two attempts, this makes sense from the developer's perspective: while the first Arun-3 was an attempt to secure the national power demand, the new project will be built and owned by a foreign state company. For thirty years, SJVN will export 78.1% of the generated electricity to India, and while Nepal's major problem with electricity is in the winter, north India needs most power in summer when it is hottest and water in the Arun is abundant.

Not surprisingly, given the current energy situation and the close connection between water resources, nationalism and the promise of future wealth, this contract has drawn fierce criticism from water experts, activists and the political opposition – whichever parties that might be at any particular moment. Many of these critics accuse India of neocolonial ambitions and use the case of Bhutan as a negative example where India has established a de facto monopoly on hydropower extraction. Confronted with these accusations, the Indian engineers working on the Arun-3 project argue that no other Build-Own-Operate-Transfer contract in the world is so favourable for the host country. In their narrative, Arun-3 becomes development aid with different means. ‘We are a state-owned company therefore we are not restricted by purely economic logic. We want our neighbours to develop too’, one of them told us (interview, Khandbari, 2010).

Seen from a geopolitical perspective, another reason for this ‘sweet deal’ might be the fact that the proposed dam site is only 30 km south of the Chinese border, along one of the few relatively easy passages through the mountains, in an area marked to become a major trans-Himalayan commercial corridor. In securing this location, the geopolitical aim to keep China at bay conflates with the long-established insistence of the Indian water bureaucracy to control the tributaries of the Ganges as far upstream as possible. A recent announcement by Indian Prime Minister Narendra Modi that his government will not buy Nepal’s hydroelectricity from dams built by Chinese developers clearly shows the red line for India’s self-proclaimed benevolence.

After many delays, the Prime Ministers of Nepal and India officially laid the foundation stone for the Arun-3 in May 2018. In an odd joint ceremony in Kathmandu, they simultaneously pressed two remote-control buttons that unveiled a granite plaque at the construction site 200 km east of the capital. Subsequently, construction started in unruly circumstances: a tunnel collapsed, trapping four workers for 39 hours before they could be rescued. On at least three occasions, improvised explosive devices have been planted at different spots around the construction site (*Himalayan Times* 2018; *Kathmandu Post* 2018). Asked about the bombs, friends from the region suspected outside radicals interested in creating chaos of being behind these attacks instead of disgruntled locals. To the best of our knowledge, police investigations so far have led to no arrests.

Amid these uncertain beginnings, SJVN has undertaken or announced a variety of compensation and mitigation activities. The families who will lose land to the scheme have been offered very generous

compensation packages, 30 kWh of free electricity was promised to every household in the directly affected communities, and SJVN has signed a non-binding commitment towards skills development and employment opportunities for locals. In addition, 1.5% of project shares have been earmarked for 'project affected people'. However, one employee told us: 'Tell your friends not to buy those shares. In this particular project, the government has gotten such a good deal that private small-scale investors will not make any profit on their investment' (interview, Kathmandu, 2015). However, during frequent trips to the Arun region before construction started, people talked frequently of profitable share offerings in other regions of Nepal, most importantly the Chilime example. Longing for investment opportunities, people across Nepal have been demanding that *more* shares should be made available for 'local' people.

We understand the enthusiasm of indigenous communities in Nepal's periphery to buy into these 'local' shares as their humble attempt at securing their share of Nepal's rivers. After centuries of discrimination by a high-caste Hindu elite, they see the offering of local shares as a small step towards a more inclusive and egalitarian state. Given the disappointments of the post-civil war peace process, at the moment this is as much progress as they can hope for. Beyond that, after thirty years of uncertainty as to whether Arun-3 will be constructed or not, to many of our interlocutors, buying shares serves as confirmation that eventually something will happen and that all that waiting was not in vain.

A revisit to the Arun valley in November 2019 revealed a radically changed attitude of local interlocutors towards the project. As civil engineering progressed, it became increasingly clear that many of the expectations the Indian developer had raised over the years would remain unfulfilled. Nobody knew when the promised electrification of directly affected households would take place. Asked about the 'local' shares, friends in the village of Num told us that they had heard the shares would only become available after the commissioning of the plant – a detail, they claimed, nobody had bothered to tell them beforehand.

However, the main criticism all over the region was connected to the fact that there were almost no jobs for local people. While indigenous activists for years had cautioned that promises of local jobs had to be tied to a skills development programme to avoid the well-known problem that local people will only get jobs as low-skilled labourers during construction, it had become obvious that not even those jobs were available for locals. Despite the fact that SJVN has a



Figure 3.2. *The construction site of the Arun-3 hydropower project in Nepal, November 2019. © Matthäus Rest.*

large civil engineering division, the company had tendered the actual construction work to subcontractors. Not surprisingly, those companies brought in their own work crews. During three days at and around the dam construction site, we met one local person who had found employment in the project. He was working as accounting assistant for the Gujarati company in charge of the electrical engineering component. The vast majority of construction workers and truck drivers we talked to came from Western Nepal, Kathmandu and India, while senior staff seemed to come exclusively from India.

Furthermore, with a change of personnel, senior SJVN staff had radically changed their way of interacting with local community and civil society leaders. A friend and indigenous activist complained: ‘With the old *hakim* [boss], their office door was always open. We had his cell phone numbers. But he left for India. The new bosses don’t talk.’ This taciturnity became obvious when we wanted to meet one of the Indian executives at the newly constructed SJVN headquarters. We had spoken to our contact at the Investment Board Nepal in Kathmandu beforehand to inquire whether we would need any form of accreditation or advance notification, which he negated. Still, after waiting for 30 minutes in front of his office, we were asked to leave. ‘I’m very sorry, but some bad people have come recently. It is very difficult for us’, his assistant told us as he walked us back to the

main gate of the impressive compound the company had erected in close vicinity to the airport in Tumlingtar.

Case 2: The Upper Tamakoshi Project

Located halfway between Kathmandu and the Arun-3 site in the district of Dolakha, the 456 MW Upper Tamakoshi Hydropower Project (UTKHP) has been under construction for several years now. Once considered a low-priority project, overlooked by the state and international agencies focused on megaprojects like Arun-3, it is now a 'national priority project' on the brink of completion. Like Arun-3, the project is designed as a peaking run-of-the-river project that creates temporary storage that can be utilized at strategic moments of peak demand or pricing – while the volume of flow is relatively low, the hydraulic head in this steep terrain is over 800 metres. Once the project is completed and connected to the national grid, it will become Nepal's largest hydropower project and will increase the national electricity generation capacity by almost 50%. Construction began in early 2011, but the project has faced a series of setbacks in recent years – including the 2015 earthquake and a fuel crisis triggered by Nepal-India disputes (Lord 2018). After pushing back the expected completion date several times, project developers most recently predicted that the project would begin commercial operations by the end of 2020.

In recent years, the Upper Tamakoshi project has been at the forefront of the public consciousness for a variety of reasons: first, because government officials and hydropower developers frequently state that the completion of the UTKHP will be a point of inflection in Nepal's push for national energy security and energy sovereignty – the moment Nepali electricity users will be guaranteed a permanent end to the rolling blackouts and put the scarcities of the past behind them; second, because the Upper Tamakoshi HPP was slated to conduct an initial public offering that was to be the largest IPO in the history of the Nepal Stock Exchange at the time of its announcement.

Over the last four years, however, the Upper Tamakoshi HPP has been troubled by a variety of disruptions and conflicts. The troubles began in early 2015 during initial preparations for the IPO, as hundreds of thousands of potential investors across Nepal registered to purchase shares, generating a palpable 'economy of anticipation' (Cross 2015) that spread from the project site in Dolakha to the halls of government in Kathmandu. As the speculative buzz waxed and waned, the hydropower company itself was undertaking

a massive data-collection exercise to determine the legitimacy of different claims – effectively an updated census wherein data on everything from income to livestock to births/deaths was collected and provided to the district-level government. This process precipitated a series of conflicts concerning the definitions of eligibility criteria: would residency in the ‘project-affected area’ be determined by birth, residency time or landholding? What kinds of documentation would be accepted? What about labour migrants and women who have married away? In March 2019, just a few weeks before the 25 April earthquake, project construction was halted by two separate strikes organized by stakeholder groups demanding a ‘fair’ opportunity right to invest in the project. These strikes and the contestations over shareholder allocations that preceded and followed them highlight some of the broader debates over equity and benefit sharing in the hydropower sector.

First, a group of local leaders from villages slated to be affected by the construction of transmission lines blocked the project access road and demanded a greater allocation of local shares. This group cited the project Environmental Impact Assessment (EIA), which officially classified their villages as *prabhavit* (affected) and accused local political leaders of diluting their rightful claims to shares by including others who were only indirectly affected in the classification. Frustrated with the way in which their tactical claim to shares through the EIA was redirected by political deal-making at the district level, one of the strike leaders told me: ‘The politicians come, but the rules and the policies are theirs, and the local people just clap. This is why we were not aware before’ (interview, March 2015).

Concurrently, Nepali employees of the main project contractor SinoHydro – a state-owned Chinese transnational and the largest hydropower developer in the world – initiated a labour strike. After hearing about the massive demand for shares across Nepal and witnessing the successful mobilizations of others, these men attempted to stake their own claim for shares. Here, they also articulated a politics of affectedness, arguing: ‘We have invested our sweat, our blood, our lives in the project tunnels. We are the most-affected people. Why shouldn’t we be able to invest our money?’ (interview, March 2015). Stopping project work for several weeks and organizing formal events, these men were willing to put their jobs at stake, demanding an allocation of four hundred shares per labourer (roughly US\$400 valued at par). During these negotiations, SinoHydro deferred to the Nepali project developer and Nepali officials, who stated that a provision to allocate shares to labourers was not included in the original

project agreement and that the pie had already been carved up. A high-level political committee of company representatives and government officials was formed to negotiate.

During these strikes, project officials bemoaned the fact that they were losing an estimated US\$250,000 per day due to project stoppages. Back in Kathmandu, policy-makers, institutional investors and other stakeholders decried these mobilizations as extractive behaviour: claiming that no citizen has the right to obstruct the development of the country or to stand in the way of projects designed to transform Nepal's water into collective wealth. They argued that these protests were costing their (future) fellow Nepali shareholders and jeopardizing the investment climate of Nepal – generally understood as a form of high treason in industry circles. One official blamed the media for these recurring controversies: 'this is because of the media . . . people's perceptions and expectations about shares have evolved over time. They were happy before and now they think they are being cheated' (Interview, 2015).

Conversely, the aggrieved parties framed these disruptive actions in moral terms and within a parallel discourse of awareness, directly stating their aim of creating a precedent that would trigger future actions and policy change. One of the local strike leaders remarked that 'a nationwide policy for awareness is needed, as this has become a national issue – to tell Nepalis about impacts and benefits: what, how, when, and so on' (interview, 2015). Pointing again to the distinctions of the EIA and citing recurring controversies regarding land acquisition for transmission lines, they said: 'If we succeed in getting our demands this could become a law and help people in other places get recognition of their rights and voice.' Leaders of the labour strike similarly recognized the importance of their demands, describing a policy gap. 'There is no law or provision in the constitution for giving shares to labourers', they said, 'but if we do not get shares here at Tamakoshi, then maybe at other projects in the future. Other people are watching us. This will catch like wildfire' (interview, 2015).

A quick examination of the mobilizations at the Upper Tamakoshi project highlights just some of the ways that the NPJL refrain can be reframed by Nepali citizens with different ideas about the dimensions of 'Nepal's water' and the meaning of 'the people's investment'. In each case, project stakeholders presented a divergent narration of hydropower development, rearticulating normative development rhetoric in local terms. By doing so, these actors reframed the politics of the shareholder model and the normative interpretations of terms like 'benefit sharing' and 'stakeholder engagement' that it car-

ries, while posing deeper questions about the fair distribution of risk and opportunity among communities impacted by hydropower development. Both the project-affected locals who protested and project labourers are what Nixon (2011: 62) referred to as unimagined communities, or people whose presences ‘inconvenience or disturb the implied trajectory of a unitary national ascent’. As the promised hydropower future is financially securitized and spatialized across the many watersheds of Nepal, local populations and other project stakeholders are reinterpreting the NPJL trope to articulate their own concepts of equity and (volumetric) sovereignty.

In the four years since these events, the project has encountered several other setbacks that delayed the initial public offering and highlighted a variety of additional risks that investors had perhaps not fully considered (Lord 2018). In sum, these events suggested that the public-private-people partnerships designed to secure the volumes of the Upper Tamakoshi watershed and to create a ‘national priority project’ had not adequately considered the variety of different *unimagined* communities and *unsecured* volumes that might trouble dreams of the hydropower future. And yet, when the Upper Tamakoshi IPO finally occurred in late 2018, it turned out to be an incredible and unprecedented success. Again, hundreds of thousands of Nepalis queued throughout the country, and the newspapers buzzed with analysis of their investment prospects and reports of investor turnout.

In August and September, more than 276,000 people from the ‘project-affected district’ of Dolakha alone turned out to buy shares – an astonishing participation rate of more than 98%. Project representatives, local and national politicians, and social mobilizers all worked together to generate awareness and ensure that local residents were registered (and, if need be, financed) to buy shares. Speaking at the local launch event in August 2018, one central-level politician captured the ethos of the moment, stating that distributing hydropower shares to the local people is ‘like a social movement’ and that ‘nobody in society should be left out’. People waited hours in sweaty lines to fill out their paperwork. In November 2018, another 346,000 Nepalis registered to purchase the remaining 15% of shares in just four days, reflecting an unprecedented level of interest. When the Upper Tamakoshi (UPPER) shares began trading on the Nepal Stock Exchange in January 2019, the company had more than 800,000 shareholders.

As 2019 drew to a close, project officials continued to reconfigure the construction process in the face of new logistical uncertainties, the UPPER stock price trebled after an initial surge, and the



Figure 3.3. *Employees from the Upper Tamakoshi Hydropower Project present a young girl from the project-affected area with a receipt for the shares that her mother purchased in her name – all citizens from the district of Dolakha were eligible to purchase shares, regardless of their age. Dolakha, July 2018. © Austin Lord.*

projected completion date was postponed yet again. In any event, company shareholders will have to wait several more years for the project to become profitable, typically several years after commercial operation begins, before any kind of dividends start flowing through. Meanwhile, some of them are paying interest on loans and perhaps wondering if perhaps the money might not have been better spent on post-earthquake reconstruction or something else. In Dolakha, Nepal's water has become the people's investment, but not yet the people's profit. Tellingly, within all of the debates about contracts, concrete and shares, *water* itself has been largely overshadowed. What can these investors now lay claim to? Have they traded one concept of equity for another? And will this trend continue for Nepalis elsewhere?

Conclusions: Uncertainties and Unsecured Volumes

In June 2018, less than two years after the 2016 Power Summit, Nepal's newly elected government promulgated a national budget that

prioritized (once again) rapid hydropower development, introducing a new and more ambitious refrain: ‘15,000 MW in 15 years’. In no uncertain terms, current political leaders are intentionally escalating the promises of the previous governments, and they want to be the ones who deliver the promised hydropower future. Amid the excitement, new deals are being made with China and India, and new money is being thrown at old problems. Depending on your perspective, this constant renewal of hydropower dreams deferred could be interpreted as hopeful resilience or as a kind of ‘cruel optimism’ (Berlant 2011).

In any case, speculation about Nepal’s hydropower future is shaped by a kind of ‘prognostic politics’ (Mathews and Barnes 2016) where visions of shared hydropower-wealth mix with declarations for energy sovereignty – where differently positioned stakeholders and prognosticators stake claims to differently imagined futures. The Power Summit, the declaration of an energy emergency, the creation of an online investment platform, protests at the Upper Tamakoshi project site and the pushing of buttons to ‘virtually launch’ the Arun-3 project are all prime examples of the practice of prognostic politics. Each of these events indexes a plurality of hopes, expectations and investments in differently imagined futures, which become entangled together with the refrain of ‘Nepalko Paani, Janatako Lagaani’ – the catchphrase of a larger economy of anticipation, which shows that ‘the present is governed, at almost every scale, as if the future is what matters most’ (Adams, Murphy and Clarke 2009: 248).

Accordingly, both the Arun-3 and the Upper Tamakoshi projects remain under construction, much like the hydropower future. Though the bright future does not seem as far away as it once did, open questions remain. One of the most significant of them is about environmental risk – the unsecured volumes that, much like unimagined communities, threaten the idealist machinations of future-making projects. How do those eager to construct a ‘hydropower nation’ try to exclude hydrologic uncertainties, the erosive power and the weight of water, and its implication for seismicity from the discussion? As Huber et al. (2017: 51) have recently argued, further investigation is needed to consider ‘how and why dam construction continues to be projected as an orderly and safe activity, alongside the emphasized ideals of modernity, growth and clean/climate-friendly development despite a history of dam failures’. Within Nepal, the state and the hydropower sector are working hard to guarantee that ‘Nepal is still open for business’ in the wake of the 2015 earthquake, which often requires avoiding hard questions about the risk related to future seis-

micity and other geohazards. This trend is common throughout the Himalayan region, where the intensification of hydropower development often requires collectively denying or wilfully ignoring the significance and scale of geological and climatic unknowns (Butler and Rest 2017; Huber 2019; Lord 2017). Ongoing tectonic entanglement ensures that the Himalayan region is an utterly insecure territory and, despite the material and financial securitization of Nepal's imagined hydroscares, hydropower assets are similarly *unsecured*.

We believe that by thinking about territoriality through the unsecured volumes of Nepal's energy futures, we can see two very different conceptions of sovereignty at work within the Ganges catchment area. Whereas public discourse in Nepal is occupied with constructing infrastructure to harness the imagined water wealth for national development, some Nepali pundits also call for a different kind of self-determination, arguing that the Indian state sees Nepal's headwaters as an extension of their own territorial claims. Chinese-facilitated hydropower development in Nepal's northern region hints at a similar set of geopolitical logic and alliances (Murton and Lord 2020). As Chinese and Indian actors move to secure some of Nepal's hydropower project sites and contracts for their own hydropower industries, they become variably implicated in contestations over Nepal's hydropolitical volumes and 'energy sovereignty' in Nepal. From the perspective of both powers, Nepal appears less and less like a buffer state – be it a yam between two boulders or a mouse between two elephants – and more and more like a soaked, porous sponge.

In this discursive environment, the NPJL refrain serves two important purposes: at the local scale, it reshapes conceptions of equity and the politics of consent; and at the national scale, it successfully reframes the question of energy sovereignty, offering the promise of shareholder citizenship. And while the investments of individual shareholders may seem less significant than the financial volumes mobilized by the country's neighbours, they are quickly becoming more than just the proverbial pennies in the bank as time goes by. As of January 2020, thirty-four hydropower companies had successfully completed initial public offerings and their shares were being publicly traded on the Nepal Stock Exchange; while another dozen companies were slated to conduct IPOs in the coming year (ShareSansar 2020).

Tellingly, in February 2019, the NPJL refrain was invoked once again when Prime Minister Khagda Prasad Oli launched a new and expanded programme to promote Nepali investment in the hydropower sector, also called 'Nepalko Paani, Janatako Lagaani'. This ambitious plan seeks to mobilize an estimated US\$1 billion in domestic

Nepali investment to build nineteen government-selected hydro-power projects, distributed across all seven provinces, that would collectively represent 3,479 MW of generation capacity (*Repubblica* 2019). Inaugurating the campaign and speaking a familiar language of ‘socioeconomic transformation’ and emancipation, the Minister for Energy, Water Resources and Irrigation repeatedly highlighted the capacity of Nepalis to mobilize their own resources, suggesting that Nepal might not need to rely on foreign donors anymore. However, just one year later, after a series of lukewarm share offerings, Nepali media outlets began publishing articles showing ‘how hydro companies are cheating shareholders’ (Pangeni 2020: 1) which have added a critical question mark to dreams of citizen-financed hydropower futures.

In recent years, timelines have been reconfigured and new plans have been announced, but the spectacular refrain of shareholder citizenship has continued to circulate and to fuel recursive dreams of energy security and volumetric sovereignty in Nepal. Government officials and private sector actors continue to summon imagined citizen shareholders using the ‘Nepalko Paani, Janatako Lagaani’ refrain: branding Nepal as a hydropower hotspot, creating new platforms for coordinating and channelling investment, and calling for Nepali self-determination in the energy and development sectors. Amid uncertainty, the spectacular and the speculative remain mutually dependent, and Nepal’s hydropower futures remain largely unsecured.

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Notes

1. In more than a century of hydropower development, beginning with the Pharping Hydropower Station in 1911, less than 1,000 MW of generation capacity has been installed.
2. Under ideal conditions, a capacity of 10,000 MW will yield 10,000 MWh of electricity in one hour, but no hydropower plant in the world reaches this efficiency of 100% capacity factor. Many experts estimate that during the trough of the dry season, barely more than one-third of installed capacity will be used.
3. The state owns water rights in Nepal and sells licences to hydropower developers, who own hydropower assets through thirty-year Build-Own-Operate-Transfer contracts. Shareholders are paid a portion of company profits that accrue over the period of commercial operation, and shares are publicly traded on the Nepal Stock Exchange.

References

- Abram, S., and G. Weszkalnys. 2011. 'Introduction: Anthropologies of Planning: Temporality, Imagination, and Ethnography', *Focaal* 61: 3–18.
- Adams, V., M. Murphy and A. Clarke. 2009. 'Anticipation: Technoscience, Life, Affect, Temporality', *Subjectivity* 28: 246–65.
- Amrith, S. 2018. *Unruly Waters: How Mountain Rivers and Monsoons Have Shaped South Asia's History*. London: Penguin.
- Anand, N. 2017. *Hydraulic City: Water and the Infrastructures of Citizenship in Mumbai*. Durham, NC: Duke University Press.
- Baviskar, A. 2007. *Waterscapes: The Cultural Politics of a Natural Resource*. Ranikhet: Permanent Black.
- Bear, L. 2015. 'Capitalist Divination: Popularist Speculators and Technologies of Imagination on the Hooghly River', *Comparative Studies of South Asia, Africa and the Middle East* 35(3): 408–23.
- Berlant, L. 2011. *Cruel Optimism*. Durham, NC: Duke University Press.
- Billé, F. 2019. 'Volumetric Sovereignty', *Environment and Planning D: Society and Space* (Online), 4 March. Retrieved 20 March 2020 from <http://societyandspace.org/2019/03/04/volumetric-sovereignty-part-1-cartography-vs-volumes>.
- . (ed.). 2020. *Voluminous States: Sovereignty, Materiality, and the Territorial Imagination*. Durham, NC: Duke University Press.
- Björkman, L. 2015. *Pipe Politics, Contested Waters: Embedded Infrastructures of Millennial Mumbai*. Durham, NC: Duke University Press.
- Butler, C., and M. Rest. 2017. 'Calculating Risk, Denying Uncertainty: Seismicity and Hydropower Development in Nepal', *Himalaya* 37(2): 15–25.
- Cross, J. 2015. 'The Economy of Anticipation: Hope, Infrastructure, and Economic Zones in South India', *Comparative Studies of South Asia, Africa and the Middle East* 35(3): 424–37.

- D'Souza, R. 2006. *Drowned and Dammed: Colonial Capitalism and Flood Control in Eastern India*. Delhi: Oxford University Press.
- Dixit, A. 2019. 'Climate Risk to Hydropower Investment', *Nepali Times*, 22 March. Retrieved 20 March 2020 from <https://www.nepalitimes.com/opinion/climate-risk-to-hydropower-investment>.
- Dixit, A., and D. Gyawali. 2010. 'Nepal's Constructive Dialogue on Dams and Development', *Water Alternatives* 3(2): 106–23.
- Elden, S. 2017. 'Terrain', *Theorizing the Contemporary, Cultural Anthropology*, 24 October. Retrieved 20 March 2020 from <https://culanth.org/fieldsights/1231-terrain>.
- . 2013. 'Secure the Volume: Vertical Geopolitics and the Depth of Power', *Political Geography* 34: 35–51.
- Ferguson, J. 1990. *The Anti-politics Machine: 'Development', Depoliticization and Bureaucratic Power in Lesotho*. Minneapolis: University of Minnesota Press.
- Ferry, E. 2016. 'Claiming Futures', *Journal of the Royal Anthropological Institute* 22(S1): 181–88.
- Ferry, E.E., and M.E. Limbert. 2008. *Timely Assets*. Santa Fe, NM: School for Advanced Research Press.
- Gyawali, D. 2003. *Rivers, Technology and Society: Learning the Lessons of Water Management in Nepal*. Kathmandu: Himal Books.
- Harvey, P., and H. Knox. 2012. 'The Enchantments of Infrastructure', *Mobilities* 7(4): 521–36.
- Himalayan Times*. 2018. 'Four Successfully Rescued from Collapsed Arun III Tunnel after 39 Hours'. Retrieved 20 March 2020 from <https://thehimalayantimes.com/nepal/four-succesfully-rescued-from-collapsed-arun-iii-tunnel-after-39-hours>.
- Huber, A. 2019. 'Hydropower in the Himalayan Hazardscape: Strategic Ignorance and the Production of Unequal Risk', *Water* 11(3): 414.
- Huber, A. et al. 2017. 'Beyond "Socially Constructed" Disasters: Re-politicizing the Debate on Large Dams through a Political Ecology of Risk', *Capitalism Nature Socialism* 28: 48–68.
- IFC. 2018. *Local Shares: An In-depth Examination of the Opportunities and Risks for Local Communities Seeking to Invest in Nepal's Hydropower Projects*. Washington DC: International Finance Corporation.
- Immerzeel, W.W., L.P. van Beek and M.F. Bierkens. 2010. 'Climate Change Will Affect the Asian Water Towers', *Science* 328(5984), 1382–85.
- Jha, P. 2015. 'In Nepal, Where a Battle for Rights Merges with Geopolitics', *Hindustan Times*, 1 October. Retrieved 20 March 2020 from <https://www.hindustantimes.com/world/in-nepal-where-a-battle-for-rights-merges-with-geo-politics/story-6O5KoVlnoaIEQNpx9ZnjKM.html>.
- Kathmandu Post*. 2016. 'Power Crisis, by Govt Lights, to End'. Retrieved 20 March 2020 from <https://kathmandupost.com/national/2016/02/19/power-crisis-by-govt-lights-to-end>.
- . 2018. 'IED Explosion at Arun III Office'. Retrieved 20 March 2020 from <http://kathmandupost.ekantipur.com/news/2018-04-30/ied-explosion-at-arun-iii-office.html>.

- Klingensmith, D. 2007. *'One Valley and a Thousand': Dams, Nationalism, and Development*. Oxford: Oxford University Press.
- Lord, A. 2016. 'Citizens of a Hydropower Nation: Territory and Agency at the Frontiers of Hydropower Development in Nepal', *Economic Anthropology* 3(1): 145–60.
- . 2017. 'Humility and Hubris in Hydropower', *Limn* 9: 42–53.
- . 2018. 'Speculation and Seismicity: Reconfiguring the Hydropower Future in Post-earthquake Nepal', in F. Menga and E. Swyngedouw (eds), *Water, Technology and the Nation-State*. London: Routledge, pp. 167–88.
- . 2019. 'Turbulence', *Environment and Planning D: Society and Space* (Online), 17 March. Retrieved 20 March 2020 from <http://societyandspace.org/2019/03/17/turbulence/>
- Mathews, A., and J. Barnes. 2016. 'Prognosis: Visions of Environmental Futures', *Journal of the Royal Anthropological Institute* 22(S1): 9–26.
- Menga, F., and E. Swyngedouw (eds). 2018. *Water, Technology and the Nation-State*. Abingdon: Routledge.
- Merriman, P., and R. Jones. 2017. 'Nations, Materialities and Affects', *Progress in Human Geography* 41(5): 600–17.
- Murton, G., and Lord, A. 2020. 'Trans-Himalayan Power Corridors: Infrastructural Politics and China's Belt and Road Initiative in Nepal', *Political Geography* 77: 102100.
- Nixon, R. 2011. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press.
- Pangeni, R. 2020. 'How Hydro Companies Are Cheating Shareholders', *Republica*, 17 February. Retrieved 20 March 2020 from <https://myrepublica.nagariknetwork.com/news/how-hydro-companies-are-cheating-shareholders>.
- Pigg, S. 1992. 'Investing Social Categories through Place: Social Representations and Development in Nepal', *Comparative Studies in Society and History* 34(3): 491–513.
- Rademacher, A. 2011. *Reigning the River: Urban Ecologies and Political Transformation in Kathmandu*. Durham, NC: Duke University Press.
- Republica*. 2019. 'Government Mobilizing People's Money for Hydropower Development', 14 February. Retrieved 20 March 2020 from <https://myrepublica.nagariknetwork.com/news/govt-mobilizing-people-s-money-for-hydropower-development>.
- Rest, M. 2012. 'Generating Power: Debates on Development around the Nepalese Arun-3 Hydropower Project', *Contemporary South Asia* 20(1): 105–17.
- . 2019. 'Dreaming of Pipes: Kathmandu's Long Delayed Melamchi Water Supply Project', *Environment and Planning C: Politics and Space* 37(7) 1198–216.
- Roseberry, W. 1994. 'Hegemony and the Language of Contention', in J. Gilbert and D. Nugent (eds), *Everyday Forms of State Formation: Revolution and the Negotiation of Rule in Modern Mexico*. Durham, NC: Duke University Press, pp. 355–66.

- ShareSansar. 2020. 'Listed Companies: Hydropower'. Retrieved 20 March 2020 from <http://www.sharesansar.com/company-list>.
- Shrestha, P., A. Lord, A. Mukherji, R. Shrestha, L. Yadav and N. Rai. 2016. *Benefit Sharing and Sustainable Hydropower: Lessons from Nepal*. Kathmandu: ICIMOD.
- Sneath, D., M. Holbraad and M. Pedersen. 2009. 'Technologies of the Imagination: An Introduction', *Ethnos* 74(1): 5–30.
- Swyngedouw, E. 1999. 'Modernity and Hybridity: Nature, Regenerationism, and the Production of the Spanish Waterscape, 1890–1930', *Annals of the Association of American Geographers* 89(3): 443–65.
- Wester, P., A. Mishra, A. Mukherji and A.B. Shrestha (eds). 2019. *The Hindu Kush Himalaya Assessment*. Cham: Springer.
- Weszkalnys, G. 2016. 'A Doubtful Hope: Resource Affect in a Future Oil Economy', *Journal of the Royal Anthropological Institute* 22(S1): 127–46.