

Mark Liechty
Professor of Anthropology and History
The University of Illinois at Chicago, USA

Building Capacity, Not Infrastructure: Lessons from Hydropower Development in Nepal.

Forthcoming in *Handbook of the Himalayas*, Ben Campbell, Mary Cameron, and Tanka B. Subba, eds. (Routledge).

--NOT FOR CITATION OR CIRCULATION WITHOUT PERMISSION OF AUTHOR--

Nepal's hydropower sector is one of the country's few development success stories. Unlike almost every other "developing" country, in Nepal local firms design and build complex hydropower facilities using Nepali engineers, contractors, components, and labor. Nepal has largely avoided the trap whereby most poor countries are forced to accept energy infrastructure projects that are foreign designed, funded, and built—typically resulting in debt, dependency, and unsustainability. This chapter explores how this rare development success story came about.

After briefly tracing the half-century history of the Butwal Power Company (BPC), I focus mainly on the development philosophy of its visionary founder, Odd Hoftun. A pioneering Norwegian engineer, development worker, and missionary, Hoftun insisted that—if Nepal was to create a modern national economy—Nepalis must develop technical skills needed to break the cycle of poverty. This view led Hoftun, and scores of like-minded Nepalis who worked with him, to promote Nepali-driven hydropower development as the key to Nepal's economic future. Counter to prevailing development logics (then and now), they insisted that all aspects of hydropower development (design, construction, manufacturing, maintenance) be done in Nepal, by Nepalis.

Through a slow succession of ever-larger hydropower installations built over four decades, BPC and its more specialized corporate offspring managed to gradually create a

complex, interlocking, and interdependent hydropower development ecosystem. These companies trained generations of skilled workers—from engineers to hydraulic modeling specialists, and from tunnelers to heavy equipment operators. This trained workforce then spread out into dozens, now hundreds, of competing or complimentary companies servicing almost every aspect of Nepal’s hydropower development sector. Now only one of many hydropower developers, BPC’s legacy is the robust network of Nepali owned and operated hydropower specialists that its early leadership made possible.

At play is a struggle between two competing development paradigms: Hoftun’s, that emphasizes gradual national human capacity building (at the expense of speed and efficiency) and another—favored by most large-scale international development agencies and banks—that emphasizes rapid, large-scale infrastructure building (at the risk of unsustainability and dependency). At stake is whether what passes for “development” primarily benefits the countries in which it occurs, or the banks, corporations, and other investors that finance capital-intensive projects.¹

Forging a vision

The history of Nepal’s hydropower sector is complex, with initial installations dating back to the late nineteenth century. While many have contributed to the story, most people recognize Odd Hoftun as having played a central role. Born in Norway in the late 1920s, his father the manager of a small rural hydropower plant, Hoftun grew up surrounded by the challenges and opportunities of turning flowing water into electricity. The Hoftun family was

¹ This chapter is an extremely condensed version of my book *What Went Right: Sustainability versus Dependence in Nepal’s Hydropower Development* (Cambridge, 2022). For a more detailed biography of Hoftun, see Svalheim 2015.

part of Norway's steady ascent from among Europe's poorest countries to among its most prosperous. With few other natural resources, Norway transformed its rivers into power which, in turn, generated industry, jobs, and steadily rising standards of living.

After completing a degree in engineering, in 1958 Hoftun (and his wife Tullis) accepted an invitation from the United Mission to Nepal (UMN) to build a new hospital in Tansen. In Nepal the Hoftuns found conditions to be both strikingly foreign and uncannily familiar. Observing poor, landless Nepali day laborers crouched by the roadside breaking rocks with hammers (for use in road construction), the Hoftuns saw not just poverty but also visions of the past when they had seen poor Norwegians doing exactly the same thing only a few decades earlier (Svalheim 2015, 7). In a strange way, the Hoftuns had travelled to the other side of the world only to find a version of home. Nepal and Norway were vastly different but also surprisingly similar in terms of the challenges they faced and the resources they had to confront those challenges.

When it came to building a hospital—in addition to having limited practical experience in construction—Hoftun faced two big problems: a shortage of money and a shortage of skilled labor. Technically, Hoftun knew what he was supposed to do and how to do it. But with very little (and sporadically available) money to work with, steel and concrete imported from India were out of the question, and even bricks and timber were expensive and in short supply. Nothing happened quickly and patience was one of the key lessons that Hoftun learned in his four years at Tansen. Another lesson was the need for improvisation and flexibility. With the help of others, Hoftun honed a “can do,” “make do” approach that soon became an end in itself.

If lack of money was one problem, lack of local skilled labor was another. Hoftun needed Nepali craftsmen to help build this hospital but there were virtually none available. Many people

were looking for work but the kind of workers Hoftun wanted didn't exist. Hoftun quickly recognized that, if he wanted skilled labor, he and others were going to have to train people themselves. So they did. Hoftun watched as two things arose: a hospital and a core group of semi-skilled Nepali masons, woodworkers, electricians, blacksmiths, and so on. What's more, once the hospital was done, the Nepali craftsmen took their skills and used them as the basis for careers. It dawned on Hoftun that he had solved two problems: building a hospital and giving a group of people the skills to stand on their own feet. On-the-job training may not be the most efficient way to simply get a job done (like building a hospital) but it was a very efficient way of producing skilled labor which would make the next building job much more efficient.

It was from this realization that Hoftun began contemplating a way to institutionalize the kind of skills training and job creation that had happened haphazardly in Tansen. Hoftun approached the Nepal government with a proposal to create a trade school to promote industrial skills. Based on an agreement between UMN and Nepal's Ministry of Industry, Hoftun launched the Butwal Technical Institute (BTI) in 1963. To provide electrical power for its own workshops, the institute built a small hydropower plant on the Tinau River (just above Butwal) that eventually grew into a one-megawatt facility. In order to own and operate the plant and its distribution network Hoftun and UMN registered the Butwal Power Company Ltd. (BPC) in 1965, in partnership with the Nepal government which became a minority shareholder.

By the time the Tinau project was finally completed in 1978, BTI was flourishing but Hoftun was beginning to formulate a new vision for further work centered on hydropower. From his experience in Norway he knew the powerful "multiplier effect" that energy brought to any economy. With energy came jobs and industry, with jobs came money circulating through the community which, in turn, created more jobs. If, like Norway, Nepal could turn its moving water

into power, that power would form the basis for an independent national economy. And as a Norwegian, familiar with Norway's history of conquest and exploitation by foreign states, Hoftun saw hydropower as a key element in fledgling Nepal's struggles to assert sovereignty and economic independence vis-à-vis its giant neighbors, India and China.

Hoftun also believed that for hydropower development to sustainably contribute to Nepal's industrialization and national independence (economic and political), it had to be firmly in Nepali hands. Even if well-intentioned, power plants engineered, built, and maintained by foreigners would leave Nepal dependent on foreigners. Nepal needed the skilled labor to take a power project from concept to completion. Hoftun knew that creating skilled labor through on-the-job training was time consuming and inefficient. But he also knew that, once those Nepali skills were in place, they would form the basis for greater and greater accomplishments. Capacity building is what would ultimately break what Hoftun saw as a "vicious circle": without experience, no jobs; and without jobs, no experience. Whether for an individual, company, or nation, capacity building was the key to building competence, sustainability, and independence. As a Nepali former BPC administrator explained to me, BPC existed not to produce money, electricity, or even power plants, but to produce "trained Nepalis."

The Butwal Power Company became the means by which to implement a vision of increased power production, job growth, increased standards of living, and national independence. After the 1 MW Tinau project, between 1981 and 1991 BPC and its subsidiaries built the 5 MW Andhi Khola hydel project. From 1988 to 1994 they built the 12 MW Jhimruk project. And from 1993 to 2000 BPC and partners built the 60 MW Khimti project. Along the way BPC created a series of corporate offspring specializing in different aspects of hydropower development. In 1972 BPC created an internal Development and Consulting Services (DCS)

division focusing on engineering and design. In 1977 BPC spun off the Butwal Engineering Works (BEW) tasked with fabricating hydropower components (which, in turn, in 1985 established Nepal Hydro and Electric Pvt. Ltd. (NHE) specializing in electromechanical equipment manufacturing and repair). In 1978 came Himal Hydro and General Construction Company (Himal Hydro) specializing in tunneling and civil construction. In the meantime BPC was first nationalized (in 1995) and then privatized (in 2003) at which point it became the Nepali-owned hydropower developer and distributor that it is today.

Elsewhere I trace this complex history in detail (Liechty 2022) but here I explore Odd Hoftun's development philosophy: its characteristics, how it evolved in Nepal, how Nepalis working with Hoftun understood it, and why many Nepalis recognized Hoftun's vision as a version of their own dreams for Nepal. It is this convergence that accounts for the successes BPC achieved.

Hoftun's development philosophy

From the start the Butwal Power Company had three distinct institutional logics folded into its corporate DNA. BPC's majority shareholder, The United Mission to Nepal, was dedicated to serving the disadvantaged and operated on a non-profit, grant-funded basis. As a minority shareholder, the Nepal government represented a bureaucratic administrative logic that (ideally) stood to advance the national good, paid for by taxation (and, in the case of Nepal, international aid). And third, the logic of business and the market: profit-driven, competitive, and inherently risky. From the beginning, BPC's challenge was to reconcile these three impulses: donor-driven service, prioritizing the national interest, and market-derived profit.

When I asked Hoftun why he had chosen to institutionalize his vision for capacity building in the form of a corporation—rather than as a non-profit, or a government-run enterprise—he repeatedly stressed the importance of *board control* made possible by the corporate model. Ultimately it was board control that would allow Hoftun to model and pursue *ethical* practices in the capitalist marketplace: most importantly, prioritizing capacity building over profit. Unlike many of his UMN colleagues who took the idea of “ethical capitalism” to be inherently contradictory, Hoftun had a much more optimistic view of the market as a place in which to cultivate a set of moral values. Faced with colleagues for whom “‘corporation’ was a bad word,” Hoftun insisted that “The nature of a company depends on the owner. Corporations aren’t bad, leadership is.”

It was precisely because ownership guaranteed control over leadership that Hoftun chose the corporate model as the best means by which to pursue his vision. “It is a good model,” he explained. “It puts finances under clear control. So for the sake of control ... it is best.” For decades Hoftun worked tenaciously to maintain control, or at least influence, over the corporations he founded in Nepal in hopes of keeping those enterprises focused on developing human capital rather than corporate revenue. For Hoftun profit was not an end in itself, but a means to the end of collective advancement. As long as he and like-minded people were in control, Hoftun was confident that he could curb the corrupting influence of money, engage in ethical business practice, and spread that ethical corporate culture to others.

Although corporate in essence, the story of how Hoftun’s market-based development vision played out is full of anomalies and even contradictions. Rather than being clearly distinct from the non-profit/NGO or state-owned models, BPC was often a somewhat bizarre amalgamation of all of them. For example, while BPC was established as a private corporation,

the Nepal government was an important shareholder from the beginning. What's more, because BPC had (and still has) monopoly power distribution rights in certain parts of Nepal, it functions as a "public utility." BPC is a kind of public/private hybrid.

But the logic of the donor-driven NGO world also plays an important role in BPC's past. Hoftun is quick to acknowledge that, for its first thirty years, the supposedly market-based company and its corporate off-shoots were almost completely dependent on grant and donor funding. Until the 1990s, all of BPC's power projects were grant funded, mostly from Norad, the Norwegian state development agency. Nevertheless, Hoftun was always wary of the NGO model and its dependency on donor funding. NGOs tend to reproduce the logic of donor dependence in their own programs, often treating aid recipients as charity cases who, in turn, become dependent rather than self-sustaining. In terms of efficiency, looking around at the development world in Nepal, Hoftun saw the main danger of NGO donor dependency to be not a lack of resources, but an *overabundance*. "To have too much money is like poison," Hoftun told me. Rather than fostering institutional budget-management, problem solving, and independence, donor money promotes waste and inefficiency. "Too much money just destroys the will to make do with whatever is possible and keep the costs down. I learned that stuff while we built the hospital in Tansen. It was a good lesson." Hoftun recognized the anomaly of a private sector company like BPC subsisting on grants—especially in light of his pointed criticisms. "My own philosophy was that grant money should be used as if it had been obtained on commercial terms," writes Hoftun (2004). In other words, even if grants didn't require BPC to pay interest or dividends, Hoftun insisted that donor money be used frugally with all profits to be invested in "sound expansion" of the business.

BPC's donor funding points to one of the prime ironies of Hoftun's decision to follow a private-sector, market-based approach: the reason that BPC could not initially rely on the market for its support is that, for decades, the market did not exist. Quite simply, the market for hydropower services, and even for electrical power itself, hardly existed. Therefore, Hoftun had to essentially create the market demand, and simultaneously simulate market conditions, for BPC and its spin-off companies. Unless and until there was market-driven demand for hydropower investment, hydropower engineering services, hydropower construction services, and hydropower electromechanical equipment, Hoftun would have to mimic the conditions under which such demand operated so that in time, when demand finally arose, his companies would be ready. From Hoftun's point of view, all the companies were part of a larger strategy. He felt that the different companies (representing different sectors of the hydropower development economy) needed to learn how to work both independently and inter-dependently. They needed to learn how to operate efficiently, profitably, and sustainably; how to negotiate legal contracts; how to meet deadlines: in short, how to operate in the market even if the market wasn't there.

Hoftun's corporations were like test-tube babies or exotic animals raised in captivity. They were not born of the market with the necessary instincts ingrained. Rather, they were birthed artificially and had to be socialized into the "real world" of the market. The hydropower development sector has been likened to an "ecosystem" in which many different parts (investment, design, construction, equipment, distribution) interact symbiotically. What Hoftun had to do was set this ecosystem in motion. He knew from experience elsewhere how the ecosystem worked but in Nepal it had to be carefully coaxed into place such that 1) the different pieces actually existed, and 2) the parts learned to work together and, simultaneously, in their own interests which are, ultimately, the interests of the system. Every part of the ecosystem

should thrive and multiply, but none can succeed without all the other parts. Hoftun and colleagues had the monumental challenge of creating both supply and demand for private, market-based hydropower services.

BPC's Corporate Ethos

Odd Hoftun is the first to acknowledge that whatever successes he had in Nepal were the result of countless people, mostly Nepalis but also many other expat volunteers, who helped him refine and actuate his vision. Without them, little would have happened. The fundamental question is how and why Nepalis embraced his vision.

First, even though a missionary, Hoftun always couched his ethical principles in secular terms. This secular middle ground allowed all Nepalis to view their work in terms that were compatible with their own religious backgrounds.

This ethical stance also came through in Hoftun's management style. While he might have been tolerant, Hoftun could also be judgmental, in good and not-so-good ways. On the one hand he was quick to morally condemn those whose business practices he disagreed with. But Hoftun was equally quick to identify what he saw as good qualities in others, and to reward them. Both Nepalis and foreigners noted how Hoftun's meritocratic management style was very un-Nepali. Hard work, collective orientation, innovative thinking, loyalty: these qualities led to greater responsibility within the organization, with younger people sometimes advancing more quickly than those with seniority. Though it violated Nepali bureaucratic norms, Hoftun's emphasis on quality of service (over length of service) created a dynamic corporate culture that was exciting and rewarding to work in.

Almost all of the former and current Nepali BPC staffers (who had worked with Hoftun) I spoke with stressed how the combination of Hoftun's commitment to service, honesty, and openness, along with his relatively egalitarian, meritocratic management style, promoted an energizing sense of team membership. One person described weekly BPC staff meetings in the 1970s and 80s where people from various parts and levels of the organization would meet and "share openly, hiding nothing because there was nothing to hide." He described a feeling of calm, focus, camaraderie, and high morale that was possible because everything was transparent and there was nothing unethical going on. People worked collectively to solve problems in a way that gave everyone a sense of both shared responsibility and shared accomplishment. Working for BPC was like working as a team, not for a company. "There was no difference between owners and employees," said one person. "We were all employees during our time. Now there are employers and employees. That is the difference that I see in one sentence."

Working in BPC not only gave people a sense of collective mission but a sense of serving their country to advance its collective destiny. Many noted Hoftun's fierce "love for Nepal," both because it mirrored their own and because it was a vote of confidence that stood in contrast to the opinions of most other foreigners. "I don't know how it is now," a former staffer reflected, "but every BPC staff during that time [the earlier decades], feel proud to say that 'I was a BPC employee!' I feel proud to be part of BPC history because BPC existed to serve Nepal, not to serve some owners." Noting how today Nepal is able to build complex hydropower projects that neighboring Bhutan could not even contemplate, he continued, "I know the value of these things. There is a sort of feeling that you have for your nation. You want to stand on your own. That feeling, it doesn't come in a day."

Also crucial to BPC's early success was Hoftun's ability to surround himself with Nepali leaders with shared values, values that often made them a poor fit for most Nepali corporate or bureaucratic institutions. These Nepali administrators soon became both the public face of BPC but also the principle models for ethical behavior that most staffers encountered. For example, many people pointed to General Manager Balaram Pradhan's leadership as inspirational. One of the Nepali engineers that Pradhan hired remembered how,

when we started to work together, he didn't show selfishness in a single hour—not in a single minute!... If I hadn't had a person like Balaram leading, along with his whole team.... I mean, when you have good people in leadership and you form a team, then those other team members also turn out to be good!... And this whole thing we learned from BPC.... If you are fair and truthful, then nobody can point to you and say, "Oh, you have done wrong." We had a clean and transparent mechanism to work with and that helped me.

Virtually all of the Nepali professionals who joined BPC (and its corporate spin-offs) could have chosen differently. Almost all the former and current Nepali engineers I spoke with described how, as young graduates, they were expected to enter government service. As a fledgling private company, joining BPC was a risk. But the payoff was BPC's strong emphasis on training and skill building. Rather than sitting at a desk in Kathmandu, joining BPC meant that a young engineer would immediately enter an active work environment with countless opportunities to acquire and build practical skills. Many commented that their engineering competence and confidence developed far more rapidly working with BPC than they would have in a government job.

Key to making that training happen was BPC's access to a large pool of experienced international engineering professionals who volunteered their services through UMN. Summing up his BPC years, one person told me,

These UMN expatriate engineers, I loved to work with them. They were always willing to help, willing to teach. As a fresh engineer I lacked many things. But I

could learn from them. They always encouraged me. The working environment was very good.

When asked what he had learned at BPC, another former engineer replied, “I should say most everything! I had two years of technical education, mostly on theory.... We might have heard the word ‘tunnel.’ But there we constructed tunnels.”

Others valued the learning environment that BPC offered—one that focused on teamwork and group accomplishment rather than hierarchy and competition. “It was especially the people I value the most,” reflected one person. “I mean UMN had expats from almost twenty countries at that time.... And they were very nice people and they groomed us because they were supervisors but they worked as teachers” helping team members learn day by day at an international standard. “When you did something wrong, they would tell you openly. But not in a threatening way. Every mistake was a chance to learn, to get better. We became very close friends.”

But with on-the-job training also came challenges. Choosing to work with BPC usually meant choosing to work on project sites in rural Nepal, far from the middle-class comforts of Kathmandu that most of the young Nepali engineers were accustomed to. Most BPC work sites followed UMN protocol by which all staff—expats and Nepalis—were expected to live in local housing, eat local food, and intentionally try to harmonize their lifestyles with local standards. One engineer told me of his traumatic first assignment with BPC. A recent graduate in civil engineering, he had read a few pages on tunneling in a textbook but never dreamed of focusing on, and working in, tunnels. Arriving at the construction site, he remembered, “I never imagined that such a remote place existed. It was a terrible place, full of leaches. I felt like I was in some kind of adventure movie, off in some remote part of Africa. That’s what it felt like!” Asked to go into the test tunnel, he panicked and for three days sat on a boulder in the river, trying to ward off the leaches.

For three days I wouldn't go into the tunnel. I sat on my boulder thinking, "Ok, this is how Nepal is. I might have to live this way." But I gradually started to learn about what tunneling is. I mean, it's one thing to learn by textbook. But we had some reference books at the site so I was going through those and I gradually got the knack of the tunneling.

Rather than quitting and heading back to Kathmandu for a government office job, he decided to accept the challenges and "live this way." Today he is one of Nepal's most skilled and experienced tunneling engineers.

By institutionalizing an ethic of hard work, problem-solving, professional growth, goal-oriented teamwork, and service to a larger cause, BPC offered Nepalis a career path where the challenges were great, but so were the rewards. Hoftun, Pradhan, and others led by championing and modeling an ethical vision. As an institutional culture, that ethic then attracted Nepalis who shared its vision, helped build the institution, and, ultimately, transmitted its values to new settings.

BPC's rise, and fall.

The story of how the Butwal Power Company, Himal Hydro, Nepal Hydro and Electric, Hydroconsult, and other related enterprises gradually developed a hydropower ecosystem in Nepal is complex (Liechty 2022). Through a four-decade long succession of bigger and more complex projects, BPC emerged as Nepal's most important private hydropower developer. But it was at the 60 MW Khimti project that Hoftun's vision, and the "BPC model" (Gyawali, Thompson, and Verweij 2017) began to falter. Because of its larger scale, Khimti's price made the earlier donor-funded approach impossible, forcing BPC to look for better financed foreign partners. But what started as a promising 50/50 partnership with the Norwegian hydropower developer Statkraft soon spiraled out of control, sidelining BPC leadership and decreasing its

investment share to only 15%. A partnership that Hoftun had assumed would minimize project exposure to predatory international financing quickly devolved as Statkraft sought commercial loans from a variety of so-called “development” banks. Forced to “securitize” its debt (to protect international investors), the project took on layer upon layer of costly risk protection. As a result Khimti’s overall cost ballooned by more than 50%—from 90 to 140 million USD—which, in turn, forced the project to demand unprecedentedly high fees for power purchased in order to generate earnings to pay off commercial debt within short time limits. But once free of debt, Khimti continued to generate high local fees and high profits that end up mostly in foreign pockets.

For BPC the Khimti project phase (roughly the 1990s) was a disastrous period. BPC launched Khimti from a position of dynamic growth, strong Nepali participation, and a very positive team- or family-like corporate ethos—only to see its vision of Nepali human capacity building ousted by a global commercial agenda of profit extraction. Hoftun had wanted to prepare BPC and its daughter companies for the harsh realities of market competition but in the process—perhaps inevitably—the humanitarian and nationalist vision that had brought them thus far gave way to the logic of the market.

In addition to the Khimti project’s hijacking by international business, the Butwal Power Company’s declining fortunes involved a variety of other unfortunate turns. In 1996 the Nepal Government took over (or “nationalized”) BPC, a move completely at odds with the prevailing global neoliberal logic of *privatizing* government-owned businesses. Under government control, company leadership failed to line up new construction jobs leaving BPC staff idle and demoralized. Although now no longer officially tied to BPC, Hoftun, Pradhan, and others worked feverishly to try to secure new business for BPC and, simultaneously, try to force the

government to re-privatize the company. BPC backers pushed for development rights for the Melamchi Diversion Scheme—a 30 kilometer tunnel that would deliver much-needed water and hydropower to the Kathmandu Valley. Built using low-budget, Nepal-sourced engineering, labor, and equipment (“the BPC model”), the plan was to put hundreds of skilled Nepalis back to work and keep Hoftun’s vision for sustainable, ethical, capacity-building development alive.

But in another round of heart-breaking machinations, the Melamchi project too was wrenched from BPC’s hands by World Bank and Asian Development Bank officials who proceeded to dole out jobs to foreign companies. Over a twenty year period of broken contracts, cost overruns, poor design, and under-the-table deals, Melamchi sucked up almost half a billion US dollars—five times BPC’s estimated price tag.

For Hoftun, Pradhan, and other backers, the last hope to restore BPC to its original mission was force the Nepal government to make good on its promises to re-privatize the business, and to regain corporate board control. To this end Hoftun methodically organized a group of Norwegian investors (mainly regional power companies) to collectively bid for company ownership. But again Hoftun saw his hopes dashed. During an excruciating four-year succession of bidding rounds, Hoftun and Pradhan watched as their competitive advantage disappeared. Tragically for all concerned, the privatization process corresponded with the most violent years of the Nepal Civil War (or Maoist-led People’s War). As Nepal’s condition deteriorated, a company that foreign capital had seen as a promising investment opportunity began to look impossibly risky. The final straw came with the 2002 Maoist bombing of BPC’s Jhimruk power plant. With almost no foreign investment money left, in desperation Hoftun and Pradhan tried to organize a coalition of Nepali business houses to bid for BPC.

Ultimately BPC did transfer to Nepali ownership with closing conditions that guaranteed Hoftun and other BPC old-timers significant influence on day-to-day management and board priorities. But, as it had so many times before, the BPC mission of capacity-building, reinvestment, and ethical practice proved no match for the values and demands of capitalist business. Hoftun railed against a series of what he perceived to be wasteful and unethical management fiascos only to find himself pushed to the margins. As BPC owners extracted profit, and as the company's market share dwindled, in 2015 Hoftun finally sold his last remaining shares.

The tree and the forest: BPC's legacy.

Now in his nineties, Hoftun speaks of BPC with deep disappointment. Judged by his almost puritanical standards of ethical business practices, focus on capacity building, corporate reinvestment of profits, and alignment with the national good, BPC's performance is unsatisfactory.

But if we shift our perspective, broadening the focus to take in Nepal's hydropower sector as a whole, the picture becomes considerably more encouraging. Arguably Hoftun—by focusing on BPC's fortunes alone—has overlooked the veritable *forest* of hydropower development activity that has sprung up as progeny of his initial efforts. BPC's market share may have dwindled but the now-many players in a once-limited hydropower development sector point to BPC's real legacy. Nepal's vigorous hydropower development scene today would have been virtually impossible without the pioneering efforts of Hoftun and countless other committed Nepalis and expats who grew BPC to maturity. Without BPC's contributions, Nepal's

hydropower capacities would likely be similar to other “least developed countries” whose industries are almost completely dependent on foreign skills, labor, and supplies.²

Along with the state and other interests, BPC had to essentially *invent the new global capitalist conditions* under which private hydropower development could occur in Nepal. The complex new regulatory environment hammered out for the Khimti project is one of BPC’s most important legacies for Nepal’s hydropower sector. To facilitate Khimti, in 1992 the Nepal government implemented three new regulatory mechanisms (a Hydropower Development Policy, a Water Resources Act, and an Electricity Act) that, along with subsequent legislation specifically crafted to promote and protect Khimti’s foreign investors, literally created the legal and regulatory environment that independent commercial power producers needed in order to exist in a new globalized market (Shrestha 2016). By demonstrating that private development of Nepal’s hydropower potential was both possible and profitable, Khimti encouraged Nepali and foreign capital to try to fill the growing chasm between Nepal’s power supply and demand. In 1992 BPC was Nepal’s only independent power producer (IPP). By 2017 hundreds of IPPs had, collectively, surpassed the state electricity authority in generating capacity (Acharya 2017).

Beyond its own corporate contributions, BPC long served as a kind of incubator, nurturing talent that was then disbursed into the wider world, where it too reproduced. BPC and its allied companies were founded not simply to build power plants, much less just make money, but to create skilled manpower. BPC’s principle “product” was not hydropower but people with skills. BPC’s early power plants could have been built (by skilled outsiders) much more quickly and efficiently but those gains would have come at the cost of Nepali manpower competence and

² Comparing Nepal and Bhutan is instructive. In the name of cooperation and aid, Bhutan allowed India to completely dominate its hydropower development leading to a condition today of Bhutan’s total dependence on India, a dependence that allows India to set increasingly extractive terms for asset development, power production, and sales (Saklani and Tortajada 2019).

confidence building. Beyond BPC and its allied hydropower companies, other industry experts pointed to several consequential early Hoftun initiatives—such as the Butwal Technical Institute (still going strong)—that have “led to this huge accumulation of manpower” in industrial manufacturing for the hydropower sector and beyond.

The fact that Nepal today has hundreds of small- to medium-sized hydropower plants in operation, with hundreds more under construction and in planning—rather than a handful of mega power plants dropped onto the landscape by global “development” banks—is incredibly important. Even more important is the fact that *many* of Nepal’s hydropower projects are being designed by Nepali engineers, built by Nepali civil contractors, equipped with major components designed and fabricated in Nepal, and funded by Nepali banks and other private investors in Nepali rupees (Karki 2017, 122). Nepal’s sophisticated hydropower “ecology”—the complex, interdependent mix of designers, builders, suppliers, and investors—would not exist without BPC’s pioneering role in setting that ecology in motion.

Hoftun’s emphasis on capacity building helped launch Nepal’s indigenous hydropower development sector. But today, even though that sector is thriving, the gap between Nepal’s electrical supply and demand is so great that virtually everyone agrees that large scale foreign infrastructure development is crucial. In addition to its hundreds of IPPs, Nepal needs huge projects that only huge foreign corporations and banks can build. But, as had been the case at Khimti, still, whenever foreign money is at play, investment “safety” is such an obsession that virtually any Nepali involvement is out of the question (Karki 2017, 118) even though Nepal’s private sector produces installed hydropower capacity at literally half the cost of World Bank and ADB financed projects—with Nepali consumers paying the difference (Karki 2017, 121). When even global “development banks” systematically refuse to promote Nepali development by

refusing to include Nepali developers in their “development” projects, there seems to be little hope of Nepal ever gaining the proven track record need to attract foreign investment to its indigenous hydropower sector. It remains to be seen whether or not Nepal can continue the steady process of human capacity building that Hoftun hoped would eventually free Nepal from predatory foreign “development.”

Bibliography.

- Acharya, Pushpa Raj. 2017. “IPPs Set to Overtake NEA in Power Production by Year-End.” *Himalayan Times*, February 25, 2017.
- Gyawali, Dipak, Michael Thompson, and Marco Verweij, eds. 2017. *Aid, Technology, and Development: The Lessons from Nepal*. London and New York: Routledge.
- Hoftun, Odd. 2004. *Butwal Power Company Ltd.—Its Past, Present, and Future*. Unpublished manuscript.
- Karki, Ajoy. 2017. “Micro and Small Hydro: Serial Leapfrogging to a Braver New Nepal.” In *Aid, Technology, and Development: The Lessons from Nepal*, edited by Dipak Gyawali, Michael Thompson, and Marco Verweij, 113-131. London and New York: Routledge.
- Liechty, Mark. 2022. *What Went Right: Sustainability versus Dependence in Nepal’s Hydropower Development*. Cambridge: Cambridge University Press.
- Svalheim, Peter. 2015. *Power for Nepal: Odd Hoftun and the History of Hydropower Development*. Kathmandu: Martin Chautari.
- Saklani, Udisha, and Cecilia Tortajada. 2019. “India’s Development Cooperation in Bhutan’s Hydropower Sector: Concerns and Public Perceptions.” *Water Alternatives* 12(2): 734-759.
- Shrestha, Ratna Sansar. 2016. “Hydropower Development: Before and After 1992.” April 2, 2016. Accessed January 5 2023. <http://www.ratnasansar.com/2016/04>