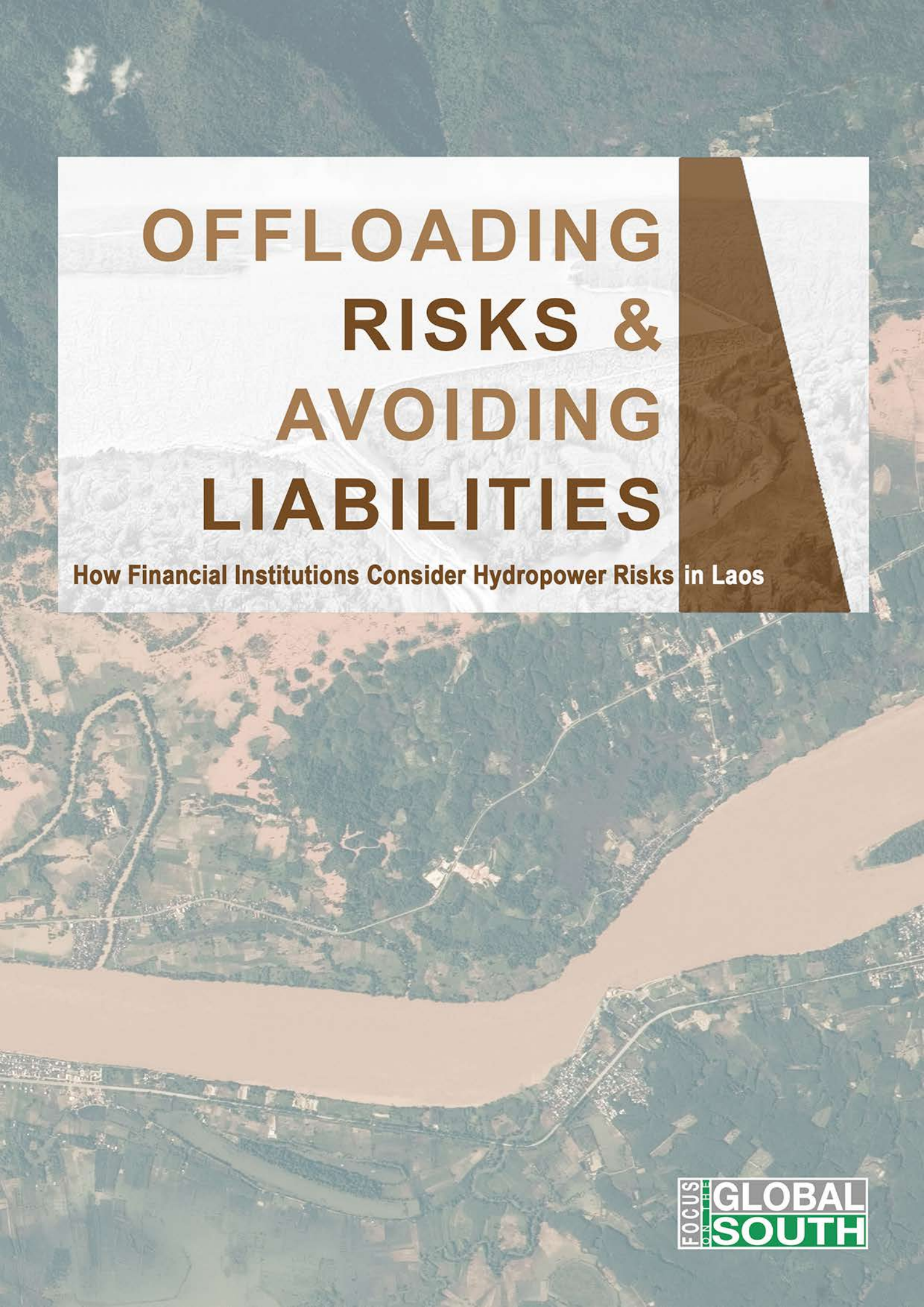

OFFLOADING RISKS & AVOIDING LIABILITIES

How Financial Institutions Consider Hydropower Risks in Laos

FOCUS ON THE GLOBAL SOUTH

Offloading Risks & Avoiding Liabilities:
How Financial Institutions Consider Hydropower Risks in Laos

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Published on: February 2019

Published by : Focus on the Global South

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A discussion paper for Focus on the Global South by Ame Trandem
February 2019

Executive Summary

Laos' ambition to become the electricity broker of Southeast Asia has led to a proliferation of hydropower dams around the country. Yet with these dams come significant socio-economic and environmental consequences that need to be considered when deciding whether to build them. In Laos, these risks all too often take a backseat to the project's likelihood of making a profit when a financial institution decides whether to get involved in a dam.

This paper examines why investors[1] and lenders[2] are interested in hydropower in Laos, how financial institutions identify and evaluate hydropower risks, and how they avoid and manage some risks, while transferring other risks onto others. The paper finds that the likely profitability of dams as a financial asset and their energy markets has made dam building highly attractive. Meanwhile, risk assessments carried out by financial institutions often fail to provide an accurate picture of the full risks and costs involved in dam building, in part because the investor will lose upfront project costs if the dam is not approved and also because there is no effective independent regulatory system in place in Laos to ensure accurate project planning and accountability from investors. As a result, many longer-term risks are simply transferred onto the public.

The paper concludes that hydropower will remain a risky economic development strategy for Laos with significant environmental and socio-economic risks that are likely to undermine the country's development. To change this trajectory, Laos must do more to ensure that all risks are the responsibility of project investors and lenders. Risks that cannot be prevented must be mitigated and remediated. Laos should avoid risky dams, while ensuring that only the most sustainable and responsible projects are considered, and that incentives are not provided to unsound projects. To improve oversight, greater transparency and disclosure of project agreements are essential. Finally, the establishment of an independent regulatory commission can help resolve Laos' conflicting roles as both investor in and regulator of hydropower. An independent regulatory commission with a legal mandate to apply penalties and backed by a commitment to hold investors and lenders accountable, can help to safeguard the country's future development, by protecting it against the costly risks of hydropower.

[1] Investors provide capital to a company by buying shares with the expectation that they will make money from dividends, or a share of the profits of the company, or from selling their shares when the share price is hiher than when they bought them. In this paper, all investors, unless otherwise stated, can be considered 'equity investors' owning shares.

[2] Lenders provide capital to a company in the form of loans, bonds, or other financial instruments, with the expectation that the money will be repaid according to a fixed schedule together with interest and fees.

Introduction

Investment in hydropower dams in Laos has increased in recent years, due to Laos' ambition to become the electricity broker of Southeast Asia. This has led to a proliferation of hydropower projects around the country with plans for approximately 100 dams to be operational by 2020. While these dams have been touted by the Lao government as the silver bullet for Laos' economic development, large risks are also inherent in these projects.

Large dams are often viewed by investors as 'high risk, high reward' projects. While large dams can generate large profits and revenue as an infrastructure asset and through the sale of electricity, they also change the relationship between people, water and land. Dams hold back sediments that are vital to downstream agriculture, irreversibly change a river's hydrology and ecosystem, block fish migrations, and threaten biodiversity. Communities are displaced from their lands and lose access to the natural resources that are critical to their livelihoods and food security. How these benefits and risks, among others, are analyzed and managed by financial institutions plays an essential role in determining whether investors will get involved, and has implications for Laos' sustainable development. To ensure that all risks and uncertainties that a dam might be exposed to throughout the project's lifecycle are properly accounted for, financial institutions carry out a risk assessment.

While all financial institutions carry out risk assessments when determining whether to invest in a dam, the way in which these assessments are conducted, their thoroughness and accuracy, and how the results factor into decision-making processes vary substantially. Despite these differences, the common aim of risk assessments is to reduce the cost of a dam project, by using tools that allow investors to anticipate, quantify and manage risks from the outset of a hydropower project, while also determining an optimum allocation of risk between the public and private sectors.

This paper explores the typical risk assessment processes that are carried out by investors and lenders seeking to invest in Laos' hydropower. It aims to identify which financial actors are involved, and present what is known regarding risk assessments, including how they are carried out and the information they draw upon. It also looks at the guarantees and incentives provided by the Lao government and multilateral development banks to make hydropower investments attractive. The wider financial dynamics and motives that have increased the bankability of dam investments globally is also explained. Lastly, the paper deconstructs how the risks of dam projects are distributed between the private and public sectors, and how the responsibility of investors and lenders for the costly risks of hydropower is growing in Laos and internationally.

The findings of this paper are based primarily upon a review of publicly accessible material, together with interviews with two people working in Laos' hydropower sector and one professional working in the field of responsible investment. The research finds that current risk assessment processes are inadequate, as many are skewed in favor of financial institutions. The consequence is that many of the long-term socio-economic and environmental risks of dams will remain unaddressed and a liability for Laos.

A pipeline of bankable dams

In Laos, there is no shortage of hydropower projects. This is due to the sheer number of potential sites suitable for dams, as well as the large number of eager investors and lenders that are attracted to the financial opportunities that dams present. To understand the current context of hydropower development in Laos, one must first understand how the global financialization of the energy sector has allowed investors and lenders to make profits by building dams. Secondly, the financial arrangements and contractual structures established for dam building in Laos have helped to decrease risks for financial institutions. The next three sections will provide this explanation.

Dams have always been considered risky projects for investors and lenders, as they are capital intensive, have long development periods and carry high risks. While the risks inherent in dam building were once a key obstacle to attracting capital, this is no longer the case in Laos. Dams are now more popular among investors and lenders and viewed as 'high risk, high reward' projects due to the bankability of hydropower. 'Bankable' dams are defined as projects that have a high probability of making money and an acceptable risk profile.

The commercial viability of bankable dams has made them an important asset class for financial institutions which can be explained in the context of 'financialization.' Financialization has been defined as a shift in the economy, in which the "pattern of accumulation in which profit making occurs increasingly through finan-

cial channels rather than through trade and commodity production."[3] Through the liberalization of the energy markets, financial instruments have been developed and barriers that once prevented capital movement have been removed.

The financial instruments used are often characterized by their complexity and have included blended finance -which includes a combination of public and private finance- combining grants with repayable financing, low-interest loans, group financing vehicles, derivatives,[4] insurance, as well as many types of investment funds.[5] Guarantees and risk mitigation mechanisms, such as political risk guarantees, are also being provided to the private sector from either the Lao government or multilateral development banks, in order to attract investors, while shielding the private sector from risks. Financing and contractual arrangements, like Public-Private Partnerships (PPPs), which include a consortium of investors building a dam, have also stimulated private sector involvement in hydropower, as longer-term risks which occur after the dam's concession period are offloaded onto the public sector after the period ends.[6] Furthermore, contracts, such as Power-Purchase Agreements (PPA) have helped to safeguard investors from market fluctuations, while passing the market risks onto the electricity off-taker and guaranteeing that there will be a buyer to provide a steady revenue stream over an agreed period.[7]

Together, these reforms to the hydropower sector and financial instruments have stimulated private sector involvement in hydropower, while ensuring commercial returns and sharing risks among sectors. As a result, investment yields have maximized for hydropower investments. The average annual rate of return on hydropower investments is estimated 7 to 20 percent for investors, while for lenders it is around 2 to 3 percent over the cost of capital over a much shorter period of time, as the payback period to lenders is at the project's financial close.[8] When a dam is considered to be particularly risky, investors may seek to earn profits in the range of 20 percent or more, in order to justify the risk they are taking on. In Laos, the USD 3.8 billion Xayaburi Dam, which is currently under construction, demonstrates the profitability in terms of its return on capital. The Thai construction company CH. Karnchang has invested 30 percent of the dam's equity and expects to generate revenues of more than 4.5 billion baht (roughly USD 140 million) per year on average.[9] Assuming CH. Karnchang continues to make this amount of revenue over the 29-year concession period, the company would earn a profit of USD 2.92 billion on the company's investment costs.

The profits to be made from dams has resulted in a boom in Laos. Currently, there are at least 46 dams in operation and another 54 under construction in Laos, which are expected to be operational by 2020.[10] Laos' current hydropower generation capacity is 6,000 megawatts and the government has ambitions to generate a further 16,548 megawatts after 2020.[11]

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[3] Krippner, G. (2005). "The Financialization of the American Economy." *Socio-Economic Review*. 3, p. 173.

[4] Derivatives play an important role in terms of being financial instruments that are designed to speculate or hedge against risks. The International Renewable Energy Agency (IRENA) has defined hedging as "Taking an offsetting position on a security (selling or buying) can help protect the security against adverse price movements and mitigate market and commercial risks." Companies that sell or use electricity can buy or sell derivatives to hedge or speculate against energy price fluctuations to protect profits against possible financial losses. Companies can also use derivatives to protect against interest rate and currency fluctuations, which have been important in the context of dam-building in Laos. (Source: IRENA (2016). Unlocking Renewable Energy Investments, The role of risk mitigation and structured finance, p.62).

[5] Investment funds are pools of money contributed by individuals, companies and/or governments that are professionally managed and invested in stocks, bonds and other assets.

[6] *Merme*, V.; Ahlers, R. and J. Gupta (2014). "Private Equity, Public Affair: Hydro Financing in the Mekong Basin." *Global Environmental Change* 24, p. 26.

[7] International Financial Corporation (2015). *Hydroelectric Power: A Guide for Developers and Investors.* February, p.94

[8] *Merme*, V.; Ahlers, R. and J. Gupta (2014). "Private Equity, Public Affair: Hydro Financing in the Mekong Basin." *Global Environmental Change* 24, p. 20 and 27.

[9] *Ibid.* p. 20 and 22.

[10] Phomnuny, P. (2017). **"**Lao Expects to Have 100 Hydropower Plants by 2020**."** *Lao News Agency***, 12 July.**

[11] Netherlands Enterprise Agency (2017). *Potential for deployment of River Run-Off Turbines in Lao PDR.* September.

BOX 1:

Exaggerated benefits & rising debts

While dams may appear profitable to the financial institutions seeking to invest, the real costs of dam building are the opposite. The exaggerated benefits and financial risks of large hydropower dams were documented in a 2014 Oxford University study, which examined 245 large dams built between 1934 and 2007. The study found evidence that estimated hydropower costs are systematically biased below the actual costs, without even considering how debts will be repaid, inflation or environmental and social costs. The study states that on average the construction costs of dams were 90 percent higher than their initial budget, while 8 out of 10 large dams took longer to build than estimated. It concluded that dams are not cost-effective, as they are too expensive "to yield a positive return."[12]

While financial institutions may benefit from dam building, the actual burden of the high costs of hydropower projects often falls on the country where the projects are constructed. These countries risk drowning their economies in debt due to the ill-advised construction of dams. The Mekong River Commission's Strategic Environmental Assessment report warned of the debt implications for Laos and the possibility of Dutch disease,[13] stating "As a country which is assessed as at a high risk of external debt default, the implications of any additional debt obligations the government of Lao PDR incurs as a result of hydropower development need to be considered very carefully."[14] In 2017, the International Monetary Fund (IMF) warned that the risk of "external debt distress" in Laos had risen from "moderate to high." The country is in debt due to its large infrastructure projects, including the foreign financing received for hydropower dams. The IMF found that the external public and publicly guaranteed (PPG) debt in 2015 was an estimated USD 6.5 billion, making up over 50% of the country's gross domestic project (GDP).[15] Concerns over the debts incurred by Electricite du Laos (EDL) were also raised in the National Assembly of Laos in 2017 as the company was reported to have a total debt of 7,291.6 billion kip (approximately USD 847 million).[16] In 2017, Laos' external debt portfolio stood at USD 13.6 billion. This debt is equivalent to nearly 70% of Laos' GDP and nearly half of this debt is owed to China, which is involved in many dam projects.[17]

Hydro's financing arrangements

The financial actors involved in the dam building boom have changed over the past 20 years, with financial arrangements becoming increasingly complex. Many of the earliest hydropower projects in Laos were financed primarily through loans provided by multilateral development banks, including by the World Bank Group and the Asian Development Bank (ADB). These institutions are now increasingly positioning themselves away from direct investment in hydropower. Instead, many multilateral development banks operating in Laos are now closely aligned with the 2017 recommendation made by the B20, a group of business leaders from the G20 countries, which stated:

> *G20 members should boost infrastructure finance by developing and promoting bankable and invest-*

[12] Ansar, A.; Flyvbjerg, B.; Budzier, A. and D. Lunn (2014). "Should We Build More Large Dams? The Actual Costs of Hydropower Megaproject Development," *Energy Policy*, March.

[13] Dutch disease has been described by The Economist as the negative impacts on the economy after a large influx of foreign investment in a country focuses on one sector, which causes the decline of other sectors in the economy. Once the opportunities to invest in this sector end, the economy suffers and is often left worse than before. Source: The Economist (2014). "What Dutch disease is, and why it's bad." 5 November.

[14] ICEM (2010). *MRC SEA of Hydropower on the Mekong mainstream: Economics Baseline Assessment Working Paper*. 8 March, p. 23.

[15] *Laotian Times* (2017). "Analysts Concerned with Laos' Rising Debt." *The Laotian Times,* 7 November.

[16] *Laotian Times* (2017). "EDL, Billions of Kip in Debt." *The Laotian Times*, 23 May.

[17] Macan-Marker, M. (2018). "Chinese dams ramp up Lao external debt: Analysts predict increasing difficulty with mounting loans from China." *Nikkei Asian Review*, 2 November.

ment-ready infrastructure project pipelines and by enhancing the role of Multilateral Development Banks as catalysts for private sector investment.[18]

As a result, many multilateral development banks are less involved in providing project finance, but rather act as catalysts that mobilize private sector investments in Laos' hydropower dams. In order to encourage private investment, these banks have provided special guarantees and incentives to investors that reduce risks. They have also worked with the Lao government on regulatory reforms to improve the investment climate for investors. This work will be discussed in more detail in later sections.

Today's financing arrangements for dams in Laos are marked by increasing complexity as each hydropower project typically has a large mix of actors involved. Together these actors, who predominantly come from within the Mekong region, form large and complex funding consortiums, which helps reduce the risk and liability of each actor involved. This will be discussed more in the next section. While a consortium may have around 10 members, they always include representation from two distinct sets of actors: investors and lenders.

Firstly, *investors* are often a mix of private and public companies. Many of Laos' dams are being built by private and public companies from Thailand, China, and Vietnam. Chinese hydropower companies are believed to be involved in around half of the large dam projects in Laos.[19] Lao companies are also increasingly involved in domestic dam building.

The Lao government also participates as an investor in hydropower projects. The participation of the Lao government is normally a pre-requisite, and the exact percentage of the Lao government's shareholding value is negotiated during the concession arrangements. While this is often welcome by the other investors as a means to reduce risk, it also raises potential conflicts of interest for Laos as it must act as both an investor and a regulator.

The Lao government typically has an equity stake of around 10-25% in a hydropower project. The state entities of the Lao government, which serve as its equity shareholders, include the Lao Holding State Enterprise (LHSE) or Electricite du Laos (EDL). The government's shares are often later purchased by EDL's Electricite du Laos Generation Public Company (EDL Gen). EDL owns 75 percent of EDL Gen.[20] In 2011, EDL Gen became the first company to be listed on the Lao Securities Exchange (LSX), the primary stock exchange in Laos. Since 2014, EDL Gen has issued three rounds of baht-dominated and USD-dominated dam bonds on the Thai securities market, in order to finance the purchase of shares in at least 10 dams in Laos.[21] In the latest offering in July 2018, EDL Gen issued bonds worth USD 550 million in order for EDL Gen to acquire EDL's shares in the Xayaburi and Don Sahong dams.[22] When the Lao government is unable to purchase shares on their own, they take out loans from lenders.

As mentioned above, the Lao government's participation as a shareholder is usually seen as an advantage for the investors, as it helps reduce potential political risks. Also, the involvement of the Lao government spreads the benefits and the risks of a dam project. Yet, the Lao government's involvement is potentially in conflict with the government's overall responsibility to regulate hydropower projects and ensure that they follow Lao laws and regulations.

Additionally, it is unclear whether LHSE, EDL and EDL Gen are working to serve the interests of the public, as it may be questioned whether these companies can balance the need to increase shareholder value with public concerns. Management may put private gains above the country's interests. The Lao government would need to have controls in place to regularly assess the projects' non-commercial performance.[23] It is also unclear whether the Lao government has accounted for

[18] Rana, F. (2017). "Preparing Bankable Infrastructure Projects." World Bank Group's Infrastructure & Public-Private Partnerships Blog, 26 September.

[19] Macan-Marker, M. (2018). "Chinese dams ramp up Lao external debt: Analysts predict increasing difficulty with mounting loans from China." *Nikkei Asian Review*, 2 November.

[20] MacGeorge, R.; Stewart, J.B. and E. Vostroknutova (2011). *Technical Note for the Lao PDR Development Report 2010: Fiscal Regime in the Hydropower Sector*. World Bank, Washington, DC, a. p. 5.

[21] Jittapong, K. and P. Changplayngam (2014). "Laos Utility EDL-Gen to raise up to $246 mln from the Thai bond market." Reuters, 15 October.

[22] *The Nation* (2018). "Laos offers dam bonds." *The Nation*, 4 July.

[23] Ahlers, R. and V. Merme (2016). "Financialization, water governance, and uneven development." *WIREs Water*.

its potential conflict of interest, as a shareholder and a regulator, within project agreements.

Secondly, the *lenders* involved are typically a mix of private commercial banks and export-credit agencies. The majority of project lending comes from within the region, including Thailand, China, Vietnam, South Korea, Malaysia and Japan. Lao and regional commercial banks based in Laos, including BCEL, Maybank Lao and VietinBank are reportedly also involved in financing domestic hydropower projects being developed by Lao companies.

Other funds to build dams in Laos, include climate finance funds,[24] which typically can help a project incur an additional incremental rate of return of 2 to 3 percent.[25] Some of the active climate financiers in Laos include the Nordic Environment Finance Corporation (NEFCO) Carbon Fund, the Clean Development Mechanism, and the Mekong Brahmaputra Clean Development Fund. Climate-aligned bonds are also expected to be financing dams in Laos in the near future. [26]

Other actors that are often indirectly involved in investing and financing hydropower dams are institutional investors. These investors and financiers are located around the world and can include pension funds, trade unions, insurance companies, endowments and sovereign wealth funds. While institutional investors do not typically hold equity in a project, they often are important shareholders in some of the commercial banks and companies that finance hydropower.

Finally, corporate law firms located in the region, including Allen & Overy, Clifford Chance, Chandler MHM, DFDL, and Latham & Watkins, regularly provide legal counsel to the investors and lenders who are involved in Lao dams. These law firms assist financial institutions to further minimize risks through due diligence support, tax and investment expertise, and reviewing and advising on complex project agreements.

BOX 2

Hedging the real costs of dams

Dam investors in Laos use the derivatives market to raise funds to cover a dam's equity costs, while reducing some project risks. The derivatives market is commonly used to mitigate potential foreign exchange fluctuations and interest rate risks for a dam, as project financing is often in other currencies. Hedging foreign exchange risks allows investors to protect themselves from risks. EDL Gen has at least USD 198 million involved in the derivatives market, in order to swap their debts that are in baht into USD and to swap related interest rates from fixed rates to floating rates with Thai financial institutions.[27] The Nam Ngiep 1 dam's lawyers also created a special foreign exchange hedging strategy, in which the USD-dominated loans can be hedged for a major portion of the loan tenors, while fixed-rate loan arrangements were made for baht-dominated loans.[28] However, the full extent to which the derivatives market is used for Lao dam building is unknown due to the complexity and opaqueness of the market, as derivatives are less regulated and less information is available about derivatives trading.[29]

[24] Climate finance funds are funds from developed countries to help poorer countries reduce emissions. While hydropower dams have often been promoted as a form of clean energy by the hydropower industry, research by Philip Fearnside of Brazil's National Institute for Research in the Amazonia, among other academics, has demonstrated that this is not the case as their reservoirs can release large amounts of methane. In Laos, hydropower dams have been found to have similar emission levels as a coal fired plant (Source: Lee, T. and K. Yan. 2013. Laos greenwashes dirty dams. World Rivers Review 28(2): 4-5.)

[25] HydroVision (2008). Hydro Finance Handbook – Prepared as a companion document for "Hydro Finance Tutorial," Session 1C of the New Development Track of the HydroVision 2008 Conference, -Under revision. HCI Publications, Kanas City, USA, p. 16.

[26] Climate-aligned bonds, includes green bonds, which are fixed-income loans, as being promoted as the key future source of hydropower financing in Laos and globally. The International Hydropower Association has been actively developing sector-specific criteria for climate-aligned hydropower investments to ensure that dams will get financed in this new market in the near future, as the market is expected to see issuances worth USD 1 trillion in total by 2020. (Source: International Hydropower Association (2018). *Hydropower Status Report*. 5th Edition, p.30-31.)

[27] EDL Gen (2017). *Annual Report 2017*. Vientiane, Laos, p. 140-141.

[28] Margoloff, L., Yashiro, S., Jaggs, S. and S. Wilson (2015). "Connecting Thailand, Laos and Japan." Project Finance International Yearbook 2015, Thomsen Reuters.

[29] Rodríguez Valladares, M. (2014). "Derivatives Markets Growing Again, With Few New Protections." The New York Times, 13 May.

The contractual structuring of Lao dam building

To facilitate the wide mix of actors involved in Laos' hydropower projects, dams are often developed as public-private partnerships. These projects are often in the form of Build-Own-Operate-Transfer (BOOT) or Build-Operate-Transfer (BOT) contractual schemes, in which the investors are responsible for designing, financing, constructing and operating a dam. A BOOT/BOT agreement is typically for a concession period of around 30 years. At the end of the concession period, the dam is then transferred to Lao government ownership.

Most of the BOOT/BOT projects for hydropower dams include a mix of private and public finance in the form of equity (i.e. from investors) and debt (i.e. from lenders), with each project typically having an equity:debt ratio of around 30:70. The equity investors will hold shares in a project and together establish a Special Purpose Vehicle (SPV), which is a subsidiary formed specifically for the dam project. The SPV will coordinate the project's financing, construction and operation. When around 30% of the capital is secured through equity, the SPV then seeks to secure the remaining 70% through 'non-recourse' loans, credits, and grants provided by lenders. The factors that influence which lenders will get involved in the dam, include politics, the estimated project cost, and the timeline for the needed capital.[30]

This contractual structure for dam projects helps to minimize risks for the investors and lenders in two ways. First, as the lending is structured as non-recourse loans, lenders can be repaid only from the SPV's revenues and/or assets, without recourse to the assets of the equity investors.[31] This helps minimize risk for the investors by limiting liability in the event of a default on a loan and protects the assets of the investors' parent companies, as only the assets of the SPV are at risk. Each investor involved is liable only to the extent of their shareholding in the dam. Secondly, if a hydropower project suffers financial losses, those losses are borne first by the investors, as the lenders are generally only negatively affected if the equity investment is lost. Because investors accept more risk than lenders, they expect a higher rate of return on their investment.

In efforts to further shelter themselves from risk, some investors are also moving away from the BOOT/BOT model in Laos. Instead, these investors prefer Engineering-Procurement-Construction (EPC) contracts when involved in dam building. An EPC contract is a contractual arrangement between the owner of the dam and a company responsible for all activities related to the design, procurement and construction of the dam. When an EPC contract is used, the investor will not typically hold equity in the project, but rather only be involved in the project over a short period of time, before handing it over to investors to operate the project. EPC contracts are often preferred by Chinese investors, as they help reduce financial risks, as the company will operate as a contractor rather than as an investor. Chinese companies also prefer this type of contract so that they will not have to deal with community opposition to the project or its resettlement plans, as this is left to the Lao government and other equity investors to manage.[32] As an example of an EPC contract, the Chinese company Sinohydro has a 3-year USD 720 million EPC contract to build the Don Sahong Dam for the project investors: Malaysia's Mega First Corporation Berhad and EDL.[33]

Risk assessments: Policies & practices

Hydropower dams come with significant risk. Some risks are visible, while others remain relatively unseen until years down the road. However, what is common among all hydropower projects is that they often entail high socio-economic and environmental risks. Dams fragment rivers and change the land. They block sediment flows and fish migrations; they change ecosystems and destroy biodiversity. They flood large areas of wetlands, forests and agricultural lands. Dams often displace hundreds and thousands of people, while destroying the natural resources on which people depend for their livelihoods and food security, further increasing poverty and inequality. Dams contribute to climate change by emitting greenhouse gases into the air. Globally dams have contributed to 1.3 percent

[30] USSD Committee on Construction and Rehabilitation (2012). *Guidelines for Construction Cost Estimating for Dam Engineers and Owners*. United States Society on Dams, May. p.50.

[31] World Bank Group (2017). *Guidance on PPP Contractual Provisions*. The World Bank Group, Washington DC.

[32] Tan-Mullins, M.; Urban, F. and G. Mang (2017). "Evaluating the Behavior of Chinese Stakeholders Engaged in Large Hydropower Projects in Asia and Africa." *The China Quarterly*, Volume 230, June.

[33] Sinohydro (2018). "Don Sahong Dam." Business Portfolio, accessed on 29 November 2018.

of human-caused global emissions.[34] Dams can also trigger earthquakes since they are often built in active earthquake areas, such as the Xayaburi Dam; extra water pressure created in a dam's impoundment area can weaken rock structures under and near the dam, possibly causing an earthquake. Dams can also collapse, like the Xe-Pian Xe-Namnoy Dam did in 2018 and the Nam Ao Dam did in 2017 in Laos, which may result in injuries or deaths.

In addition to some of the risks mentioned above, dam construction can experience delays or be derailed due to technical problems, opposition of affected people, corruption, and more. These delays can result in substantial penalties for investors if construction timelines are not met. For example, according to the Xayaburi Dam's Power Purchase Agreement, project developers are required to pay the Thai government, who will purchase the dam's electricity, at least USD 30 million a day per generator for a delay. As the dam has 7 generators, this could cost the developers USD 210,000 for every day of delay.[35]

Given the magnitude of risks associated with hydropower dams, risk assessments play an important role for investors and lenders, as they help determine the likelihood of a project's economic success or failure based on a risk analysis. Once all the risks are identified and analyzed, the investor will look to manage these risks, primarily by accepting the risk or by seeking to transfer the risk to another, which will be explained in more detail in the following sections.[36] If a dam is deemed too risky, the investor may choose to not get involved in the project.

What risk assessments entail, how they are carried out, and their quality and comprehensiveness differ greatly dependent on the policies and commitments of the financing institution. A company that clearly articulates the business activities that the firm is willing to engage in and the levels of risk it is willing to assume, is more likely to also have risk policies and procedures in place, along with designated staff that ensure the company's compliance. The quality and comprehensiveness will also differ according to whether they are conducted by in-house staff or commissioned third parties. The methodological decisions made when evaluating risks also matter, including a) the choice and definition of risk factors; b) the calculation of risk scores; and c) the determination of the probability of the risk.

At a minimum, risk assessments generally include an initial screening process that reviews and analyzes the project, location, and client, particularly when the financing institution is considering engagement with a new client or a new sector. When a financial institution identifies medium or high risks of adverse financial or reputational consequences for the institution, it may then choose to carry out further due diligence.[37] This due diligence will usually include an analysis of the probability of the risk occurring and its consequences for the project's profitability or the investors' reputation. Some of the key risk categories considered in risk assessments for hydropower projects, include political risks, economic and financial risks, technical risks, social risks and environmental risks (See: Appendix 1 for more information).

Once the spectrum of risks is identified, decisions by investors and lenders are often guided by whether risks can be avoided, managed, or transferred onto another party and the impact of this on the profitability of the project. Risks inherent to public-private partnership projects, like the dams in Laos, are also often divided between the public and private, see Box 3. The way some risks are minimized due to incentives and guarantees, while others are transferred onto other parties, such as some environmental and socio-economic risks, will be discussed in later sections.

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[34] Hurtado, M.E. (2016). "Dams Raise Global Warming Gas." *SciDevNet*, 7 November.

[35] Chitnis, A. (2013). *The Xayaburi Power Purchase Agreement: An Independent Review*. International Rivers, August, p. 9.

[36] Patel, G.P & S. Singhal (2015) "Perception and Management of Risk in Hydropower Projects." International Conference on Hydropower for Sustainable Development, Feb. 05-07, p. 335-337.

[37] OECD (2013). *Environmental and Social Risk Due Diligence in the Financial Sector: Current Approaches and Practices*. OECD Publishing, Paris. May.

BOX 3

Public vs private risks

As project agreements are generally confidential, information is rarely made public as to how the risks of a dam have been allocated between the public and private sectors. However, as a rule, risk allocation is often divided between the private and public sectors, in which the private sector normally takes the financing, design, construction, procurement, operation and maintenance risks, while the public sector will take on the political, foreign exchange and change-in-law risks. Both sectors will normally share the force majeure risks.[38]

While most environmental and social risks are allocated to be managed by project investors, the Lao government as the contracting authority is responsible for ensuring the project will benefit the country. This means Laos should conduct its own risk assessments and ensure that adequate due diligence is carried out in the first place. Laos must ensure that only the most responsible projects and investors are approved. This can be done by ensuring that project plans are adequately assessed and that mitigation plans are detailed and comprehensive. Within all project plans, the roles and responsibilities of the actors involved should be clear and finances should be reserved for all of the project's mitigation measures. All of this should be done prior to approval. Given the wide range of environmental and social risks involved with dam projects, the government should provide additional layers of scrutiny throughout the project cycle in terms of how these risks are being managed and mitigated.

Downplaying & offloading risks

Risk assessments, as currently carried out by hydropower investors and lenders, often provide a misleading picture of risks involved in dam building. There are a wide range of reasons why risk assessments are rarely accurate. Firstly, the upfront costs required to develop a project proposal, including its feasibility study and impact assessment are lost if a project is not approved. Secondly, hoping to get a project approved can serve as an incentive for an investor to exaggerate the projected benefits, while downplaying the risks. Finally, without strong independent regulatory systems in place to ensure accurate planning and accountability from investors and lenders, many unidentified and longer-term risks are simply ignored and transferred onto the public sector.

All too often, the environmental and socio-economic risks related to dam building are downplayed. Thayer Scudder, who served on the external Panel of Experts for the Nam Theun 2 Dam in Laos and was involved in other projects around the world, recently wrote about his experience with dams: "What I learned was that important short- and medium-term benefits of large dams tend to be followed by major and unacceptable longer-term economic, environmental, and social costs, including costs for more than a half-billion project-affected people living in dammed river basins."[39]

Risks are downplayed in part because few investors and lenders really integrate comprehensive environmental, social, and governance (ESG) factors into their investment practices. And when they do, the ESG considerations may take second place to economic and strategic rationales. A study by the International Institute for Environment and Development (IIED) found that investors often prefer to deal with the ESG risks as they arise, rather than spend additional capital on project plans. IIED stated "in this context, it is hard to convince developers to spend more high-risk capital on E&S [environmental and social] processes, as potential losses will be greater for the one in ten projects that do not reach financial closure."[40]

Investors and lenders, instead, often rely on environmental and social impact assessments (ESIA) to understand the risks of a dam to the environment and local population. Too often, the quality of ESIA reports is poor and many environmental and social risks are ig-

[38] Global Infrastructure Hub (2015). "Allocating Risks in Public-Private Partnership Contracts: Hydropower." GI Hub, Sydney Australia, accessed 8 October 2018.

[39] Leslie, J. (2018). "After a Long Boom, an Uncertain Future for Big Dam Projects." Yale Environment 360, 27 November.

[40] Skinner, J. (2015). "Managing the environmental and social risks of hydropower: private and public roles." iied Briefing, April, p. 3.

nored. Civil society has raised concerns over many ESIA reports in Laos as simply 'rubber-stamping' approval of the dam. The ESIA reports, when made public, fail to achieve accurate analyses or meet international standards. Peter King, an expert on ESIAs in the Mekong region who heads the Asian Environmental Compliance and Enforcement Network secretariat, stated "Despite generally sound laws, the EIA in the region is seen more as an administrative requirement than an excellent tool to improve project design. In general, across the region, public participation in EIA procedures is encouraged but not mandated, grievance mechanisms are often lacking and public access to EIA reports is poor."[41]

The Pak Lay Dam's ESIA report provides a good example of how these assessments are too often inadequate. The *Save the Mekong* coalition found that 90 percent of the section of the Pak Lay Dam ESIA on Social Baseline Conditions had been copied directly from the Pak Beng Dam assessment. Despite the copy-paste job, the report concluded in its mitigation section that all impacts from the Pak Lay Dam will be insignificant or positive.[42]

Another obstacle to fully understanding a dam's impacts is that meaningful consultations with affected communities are rarely held. Furthermore, when indigenous people are consulted, their rights to Free, Prior and Informed Consent (FPIC) are not respected. ESIA reports also rarely consider transboundary impacts and the cumulative impacts of multiple dams being built in the same basin. Other important risks are rarely considered in ESIAs, including: climate change; seismic risks; debt distress and future payment challenges; growing social inequality; alternative energy options; and whether the risks inherent to the project undermine people's rights and the country's development goals.

Due to the flaws of ESIAs in Laos, it can be presumed that many hydropower projects have inadequate environmental and social mitigation measures in place, since any Environmental and Social Management and Monitoring Plan will be based on the findings of the ESIA. This plan is later used by the Lao government to monitor the dam's compliance and is incorporated into the project's concession agreement. In conclusion, Laos is at risk of inheriting

BOX 4:

Xe-Pian Xe-Namnoy's collapse highlights dam risks

The deadly collapse of Saddle Dam D of the 410-megawatt Xe-Pian Xe-Namnoy Dam project in Southern Laos in July 2018, which left at least 38 people dead and more than 7,000 people displaced in Laos and downstream in Cambodia, was a preventable tragedy with catastrophic consequences. While detailed investigations are still underway, evidence suggests that the collapse was due to the willful misconduct of its Korean developer, SK Engineering & Construction Co. Ltd. In an attempt to maximize profits, SK Engineering & Construction Co. Ltd, altered project designs and reduced construction costs. This in turn led to the height of five auxiliary dams being lowered on average by 6.5 meters from the original design. Once heavy rains hit the province, the dam collapsed.[43] The project was 90% complete at the time.

Yet the Xe-Pian Xe-Namnoy Dam had been surrounded by controversy from its beginnings, much like many hydropower projects in Laos. Concerns had been raised by civil society that the project failed to meet international standards in terms of its environmental and social impact assessment and the way in which some affected communities were consulted, among others. With these red flags raised, it would be reasonable to expect that the highest consideration would be given to assessing the project's risks. Instead the project's investors and lenders received the go-ahead for the USD 1.02 billion project from the Lao government. Official development assistance was then provided to the Lao government from the South Korean government[44] and a syndicated loan of USD 737.5 million was provided by Thai financial institutions including Bank of Ayudhya, the Export-Import Bank of Thailand, Krung Thai Bank, and Thanachart Bank.[45] While it remains unclear how the project's investors and lenders will be held accountable for what happened, it is clear that this disaster could have been avoided.

[41] *The Economist* Intelligence Unit (2017). *Water security threats demand new collaborations: Lessons from the Mekong River Basin*. p. 16.

[42] Save the Mekong Coalition (2018). "Save the Mekong Calls for New Transboundary Impact Assessment and Suspension of the Pak Lay Dam." Statement, 20 September.

[43] Young-ji, S. (2018). "SK E&C's attempts to cut costs led to design changes that resulted in collapse of dam in Laos." *Hankyoreh*, 15 October.

[44] *Ibid*.

[45] Power Technology (2018). "Xe Pian Xe Namnoy Hydroelectric Power Project." Accessed 26 October 2018.

many long-term socio-economic and environmental costs associated with dam building. If these risks are not well managed, the country's people, environment and economy could be significantly impacted.

Risk sharing arrangements & incentives

While the financialization of hydropower has boosted investor confidence in dam building, risk sharing arrangements and incentives provided to investors and their lenders that help reduce a project's risks is the cherry on the cake. In Laos, incentives have typically been given by the Lao government, multilateral development banks such as the World Bank and the International Finance Corporation (IFC), as well as by some financial institutions from neighboring countries.

Some common incentives that have been given to investors in Laos include tax credits, public loans or loan guarantees and favorable treatments. These incentives help to increase a project's capital, while minimizing the financial risks involved in investing in Laos, as the country scores poorly globally in terms of its regulatory environment for business, particularly in terms of enforcing contracts, resolving insolvency, and protecting minority investors.[46] Project risk guarantees serve to provide mitigation for some project risks, while enabling investors to obtain lower cost financing. Guarantees may come in the form of loan or payment guarantees.

As most project agreements are not publicly disclosed, there is little transparency in terms of what the Lao government typically provides as incentives to investors. The Lao government has in the past routinely provided tax exemptions to many dam investors upon negotiation. However, it has been reported that exemptions are now being provided only on a discretionary basis. While there is no standard rate of exemption, a royalty exemption of one percent of gross revenue is considered to be the minimum.[47] Additional incentives for dams that are typically provided by the Ministry of Energy and Mines' Department of Energy Promotion and Development include: free access to land; unlimited use of foreign labour in both skilled and unskilled functions; a waiver on land conversion fees (USD 15,000 per hectare); a waiver of taxes on repatriated net profit; and waivers on other taxes and duties and offshore banking facilities.[48]

Many of the earlier dams in Laos were given blanket exemptions (known as stabilization clauses) within their concession agreements. This blanket exemption would safeguard the investors' cost of doing business, if laws and regulations changed in Laos. While Laos no longer provides blanket exemptions to projects, investors can negotiate itemized exemptions with the Lao government. Investors are required to seek specific agreements from each government body with authority to grant the exemptions. Exemptions granted then become provisions within the concession agreement, which has authority even if the project is found to be in breach of national laws.[49] While it was a positive move for Laos to stop providing blanket exemptions, little is known about what provisions investors have been negotiating in return. It is unclear whether investors will be protected from any future decisions made by the Lao government to improve its regulations related to hydropower, environmental management and resettlement.

In addition to the incentives mentioned above, the Lao government has also been actively helping to protect profits for investors. For example, after concerns were raised by the Mekong River Commission and neighboring countries over the Xayaburi Dam's risks to fisheries, additional mitigation measures costing around USD 200 million had to be added to the project.[50] In order to maintain the project's profits and compensate for the additional investment required, the media reported that the Lao government was planning to amend the dam's concession agreement, in order to provide additional incentives to the investors. CH. Karnchang, one of Xayaburi's investors, stated in the media that the new incentives would allow the investors "to achieve the preset return-on-investment goals." They also said the new incentives would likely include tax or fee incentives and

[46] World Bank Group (2019). *Doing Business 2019: Training for Reform*. World Bank Publications, 16th Edition, p.183.

[47] D.D. Doran and M. Christensen, DFDL Legal &Tax, Thailand (2014). "Cross-border hydro projects in Asia: legal issues, hurdles and solutions." *Hydropower & Dams*, Issue Two, p. 70.

[48] Netherlands Enterprise Agency (2017). *Potential for deployment of River Run-Off Turbines in Lao PDR.* September 2017.

[49] D.D. Doran and M. Christensen, DFDL Legal &Tax, Thailand (2014), Cross-border hydro projects in Asia: legal issues, hurdles and solutions. Hydropower & Dams, Issue Two, 2014, p. 70.

[50] Cronin, R., and C. Weatherby (2015). *Letters from the Mekong.* Stimson Center, p.4

an extension to the project's concession period.[51] This example demonstrates the conflict of interest between Laos' role as an equity shareholder in the dam and as a regulator protecting public interest, as CH. Karnchang was rewarded despite having not conducted adequate studies of the project's risks in the first place.

To encourage private investment in Laos' hydropower sector, multilateral development banks have provided guarantees and incentives to investors and lenders. Here are some examples of how they make dam building more attractive in Laos:

- *The World Bank Group's Multilateral Investment Guarantee Agency (MIGA)* has provided political risk insurance to foreign lenders as protection against breach of contract, expropriation, transfer inconvertibility, and war and civil disturbance.[52]
- *The IFC* has participated in providing project equity, as well as loans, while also providing risk management services and advice.
- *The IFC's InfraVentures* provides venture capital through early stage funding up until project close. The capital provided can assist investors with environmental impact assessments and help source private equity and structure financial arrangements, among other services. For example, InfraVentures provided capital to Korea Western Power Co. Ltd, to assist with the financial structuring and the environmental and social impact management of the Xe-Pian Xe-Namnoy Dam.[53]
- *The ADB* offers direct loans, equity investments, and guarantees to the public and private sectors.
- *The Japanese Bank of International Cooperation (JBIC)* has also helped to finance the Lao government's equity portion of a dam project through a loan, enabling them to participate in the development of the Nam Ngiep 1 Dam.

One of the first dams in Laos to receive guarantees from a variety of multilateral development banks, was the Nam Theun 2 Dam. This dam was built and funded by a consortium of 27 distinct parties, including the World Bank. The International Development Association (IDA) gave a partial risk guarantee of USD 42 million to 9 lenders, to help attract approximately USD 1.15 billion in private lending and investment. This helped cover potential debt service defaults and covered force majeure events. IDA's partial risk guarantee also protected the investors from a set of risks that may result from the Lao government's failing to meet certain obligations or if Laos decided to change laws and regulations. The ADB and MIGA also provided guarantees for a portion of the debt regarding political risks related to Laos and Thailand for Thai lenders given that Thailand's EGAT had agreed to purchase the bulk of the dam's electricity.[54]

Special incentives are also provided to Chinese hydropower investors in Laos. Many Chinese investors receive political risk insurance from Sinosure, a financial institution of the Chinese government. Sinosure generally will provide incentives for dam projects in Laos that have financing agreements made with Chinese banks. Chinese lenders have also demanded special guarantees from the Lao government. For dams where EDL will be the main power off-taker before electricity is later exported, Chinese lenders have required guarantees that EDL will meet its payment obligations under their power purchase agreements. Similar guarantees have not been provided for projects exporting to Thailand.[55]

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[51] *Bangkok Post* (2016) "Ch. Karnchang eyes Xayaburi add-ons." 19 February.

[52] MIGA (2018). "Nam Theun 2 Power Company Limited." Accessed on 22 November 2018.

[53] *Hydro-Review* (2012). "World Bank unit, Korean development partner on Laos hydropower." Vientiane, Laos, 23 July.

[54] Londono, A. (2005). "IDA Guarantee Paves Renewed Interest in Private Hydropower-the Nam Theun 2 Project-largest cross border project financing in East Asia (English)." Project finance and guarantees notes. World Bank, Washington DC.

[55] Heiser, W.; Liu, I. and K.B.S. Sachdev, DFDL Legal & Tax, Lao PDR & Thailand (2018). "Chinese Finance Options Examined for Southeast Asian Hydropower projects." *Hydropower & Dams*, Issue Two.

BOX 5:

Insurance strategies for managing risks

As a strategy to further shield themselves from risks, many dam investors and lenders transfer their risks onto insurance companies. They typically purchase insurance packages through various carriers, to protect investments and minimize lost revenue from business disruptions. In Laos, all hydropower companies are expected to have insurance as part of their concession agreements, although the type is not stipulated. These insurance carriers typically will provide an individual risk assessment, to determine the scope of cover and limits of indemnity.

There is a broad range of risk insurance options available covering liability for risks including natural disasters, loss of life and environmental damage. Insurance companies also underwrite their own risks through reinsurance - insurance for insurers - as this helps manage their own risks.

For example, the Xe-Pian Xe-Namnoy Dam (PNPC), which collapsed in July 2018, is reported to have at least two insurance policies. One is a construction all-risks policy with Aon Thailand, which was likely made through AIG Insurance. The second is a USD 40 million excess of loss liability policy placed in Singapore (the carrier has not been publicly disclosed), which essentially is additional cover above PNPC's primary liability policy. The project's collapse is estimated to have cost the insurance carriers at least USD 50 to 70 million across the policies.[56] While the details of these insurance policies are not public, it is likely that the insurance companies, rather than PNPC itself, will have to pay the costs of damage caused by the dam collapse in Laos, as well as the dam's repair. However, this may not be the case if the collapse of the dam is due to an act of negligence (as explained in Box 4) and the insurance policies deny coverage for this reason.

Standardizing responsibilities over dam risks in Laos

Laos has made progress in terms of developing national regulations and laws related to hydropower. The 2015 *National Policy on Sustainable Hydropower* has helped establish the expectation that dam developers will adhere to national laws and regulations while executing projects in a manner that contributes to the sustainable development of the country. The 2016 *Decree on Compensation and Resettlement Management in Development Projects* stipulates that people who are relocated must have living conditions that are better off or at least at the same level as they were before the project. The 2010 *Decree on Environmental Impact Assessment* also mandates that project affected people must participate in the ESIA process. Yet, while the legal framework helps demonstrate the responsibility of the investor in terms of mitigating environmental and social risks, there remain many weaknesses in its implementation. Some of the weaknesses stem from the lack of sufficiently trained government officials, the lack of follow-up and oversight to ensure that the regulations are followed, the paucity of environmental and social data available, and at times limited political will.

Work is also currently underway to help to standardize and allocate responsibilities for dam risks in Laos. Much of this work has been led by the IFC as part of its Advisory Services Program entitled *Environmental and Social Standards in the Hydropower Sector in Lao PDR*, which aims to help Laos' foster a sustainable hydropower sector by improving environmental and social risk management practices.[57]

While the Lao government is currently in the process of developing a standardized concession agreement for hydropower development, the IFC has supported Laos in its efforts to standardize the Standard Social and Environmental Obligations (SESO), which in the future will be annexed to all concession agreements. The first SESO template was published in 2012 and has undergone over two dozen revisions.[58] While the SESO template is expected to be finalized soon, it is unclear when implementation would begin. This document is promising as the environmental and social responsibilities of all

[56] Goyder, B. (2018). "Singapore Market on-risk for Laos Dam Disaster." *The Insurance Insider*, 7 August.

[57] International Finance Corporation. "IFC Promotes Sustainability of Hydropower Sector in Lao PDR." Factsheet, undated.

[58] Boungnaphalom, O. (2016). "Standard Environmental and Social Obligations." Presentation for Asia EIA Conference 2016, Nagoyam Japan, 10 May.

investors will soon be uniform across all hydropower projects. The draft SESO template also includes fixed penalties for failure to achieve certain criteria. The SESO template will likely obligate all investors to make monthly and annual reports to the government regarding the company's compliance and non-compliance with environmental and social standards. Additionally, the draft SESO template includes stipulations that all companies will need to make public their environmental and social mitigation plans, which to date are not always publicly accessible. Finally, the draft SESO template requires the establishment of a Grievance Redress Mechanism, by which affected communities may make complaints regarding land acquisition, resettlement and compensation.[59]

Laos' current draft Concession Agreement template, which will standardize concession agreements, states that the company will be responsible for bearing all project costs and risks, while ensuring that all costs are within an 'Agreed Cap.' The cap is the amount of money negotiated between the parties and represents all project costs that can be incurred or spent by the company. If additional costs are required to comply with the project's environmental and social obligations or for project design, the costs become the sole risk of the sponsor of the project. However, the current draft template also has a cap on the penalties and fines that a dam over 100 megawatts can accrue, which is only USD 750,000 in a year or USD 3 million during the entire concession period.[60] These amounts are extremely low and is unlikely to provide incentive for a project to comply with national laws and regulations.

Given that there has been heavy reliance on donor funding to develop these standardized agreements and improve legislation, an OECD review of Laos' investment policies has noted that there has been "less drive from the government to institutionalize best practice."[61] Whether these standardized agreements result in dams with higher standards will depend largely on whether the Lao government actively enforces these agreements and also improves their quality, particularly regarding the standardized agreed cap on penalties and fines in the draft concession agreement template. Furthermore, if key project documents continue to be considered confidential, public oversight will remain hindered.

Enforcement, liability & dispute resolution

Policy and practice are often disconnected in Laos. With little due diligence and project monitoring carried out by the Lao government, hydropower projects have largely benefited from the lax enforcement of national regulations and laws. As a result, poorly performing dam builders often have little to no incentive to change their ways.

While Laos' Environmental Protection Law threatens sanctions for anyone who damages the environment, monitoring and accountability remain problematic. The OECD has said "weak environmental governance continues to hamper the implementation of environmental safeguards in Lao PDR…. the onus on properly monitoring and reporting progress on environmental management plans is left to project developers, which makes it easier (and less costly) for project developers to overlook their environmental obligations."[62]

According to the 2015 *Decree on the Approval and Promulgation of the Policy on Sustainable Hydropower Development in Lao PDR*, the government commits that 'regular monitoring, inspection and reporting will be undertaken by relevant government line agencies, which includes appropriate third-party monitoring and inspection to ensure that all large hydropower projects are implemented in accordance with all relevant obligations set-out under the law of Lao PDR, policies, strategies, contracts and other implementation plans.'[63]

To monitor a project's compliance with Lao laws and regulations, 'Environmental Audits' are being carried out by the Lao government to ensure that hydropower projects have implemented the mitigation measures as stated in the project's Environmental Certificate of Compliance, a legal document that includes the project's environmental and social management and monitoring plan. The environmental audits are meant to be carried out on dam projects twice a year by the Department of

[59] Ministry of Mines and Energy (2012.) *ANNEX: Environmental and Social Obligations: Large Projects*. Draft 21, 27 June. Accessed 2 October 2018.

[60] Ministry of Mines and Energy (2017). *Model CA Domestic & Export Sales Hydroelectric Power Concession Agreement*. Draft 12, 3 May. Accessed 2 October 2018. p. 100.

[61] OECD (2017). *OECD Investment Policy Reviews: Lao PDR*. OECD Publishing, Paris. p.253.

[62] *Ibid*, p.253.

[63] Laos People's Democratic Party (2015). *Decree on the Approval and Promulgation of the Policy on Sustainable Hydropower Development in Lao PDR*. 12 January, p.5.

Environmental and Social Impact Assessment (DESIA). However, a donor review carried out for the Finnish government found that 'the subsequent monitoring seriously lacks [*sic*] behind' (lags) and that 'only a few selected mega projects are subjected to regular monitoring and seemingly mostly on their own conditions.' The review found that project developers currently fund each onsite inspection visit and can refuse inspection visits claiming they have insufficient funds or are too busy. Furthermore, how and what the audit will inspect is not always clear for participants, as concession agreements are often written in English and few staff have competence in English. All these identified problems significantly reduce the quality, independence and financial sustainability of the monitoring.[64]

To date, no penalties have ever been issued to a hydropower company in Laos.[65] Given that many problems have been reported with numerous dam projects, this is a clear sign that enforcement remains lax and that companies may proceed without oversight. The government's will to enforce compliance and hold investors accountable can also be questioned. As the Lao government holds equity shares in the dam projects, government monitoring may represent a potential conflict of interest, as it is essentially evaluating its own projects.

Should the Lao government, however, decide to toughen up and hold the other investors and lenders accountable for poorly performing dams, these investors and lenders may choose to sue the government in return. Laos' *Law on Investment Promotion* states that dispute resolution should be escalated through mediation, administrative dispute resolution, dispute resolution by the Committee for Economic Dispute Resolution, and finally, litigation. However, as Lao law does not prohibit foreign arbitration, foreign investors are generally advised to seek arbitration outside the country given that Laos generally accepts the use of the UN Commission on International Trade Law (UNCITRAL) Arbitration Rules in its contracts with foreign developers and investors. Investor State Dispute Settlement (ISDS) provisions are found in all investment contracts that have been signed since 1989, to which Laos is a party.[66] ISDS disputes are mainly settled through ad hoc international arbitration tribunals.

ISDS disputes are generally confidential, which means little is known in terms of how many suits have been filed against the Lao government. However, it is known that three inter-related ISDS cases were filed against the Lao government regarding the Savan Vegas Hotel and Casino in Savannakhet. In one case, the company claimed the Lao government was imposing unfair taxes, which then resulted in the confiscation of the casino. The Lao government lost the case in Singapore's highest court in 2016 and had to pay the company involved USD 200 million in damages alone.[67]

While there have not yet been any known ISDS cases involving a hydropower project in Laos, allowing ISDS provisions in contracts poses a threat to public interest. ISDS cases weaken the role of the domestic legal system, are very expensive and undermine the government's ability to regulate and protect public interest. Furthermore, they provide no ability to those adversely impacted by dam building to hold the project investors and lenders liable for the impacts unless the Lao government agrees to sue the company. The strengthening of Lao government oversight over dams in order to hold investors and lenders to account may itself be deterred by the threat of ISDS suits.

International standards and guidelines

In Laos, the majority of hydropower projects are being developed solely under the provisions of national legislation.[68] International standards and guidelines, which are often voluntary, can help to promote good practice. They serve to help investors better understand the risks

[64] NIRAS Finland Oy (2015). *Environmental Management Support Programme in Lao PDR, Phase 1: Final Evaluation Report*. Ministry of Foreign Affairs of Finland, 21 May.

[65] *Ibid.*

[66] OECD (2017). *OECD Investment Policy Reviews: Lao PDR*. OECD Publishing, Paris. p.102.

[67] The casino's American Macau-based foreign majority owner, Sanum Investments, sued its minority partner, the Lao government, for investment misconduct. The Lao government had originally seized the property and sold it, claiming that Sanum Investments owed USD 23 million in taxes and back penalties, taxes which Sanum Investments argued were unfair based on a 1993 bilateral investment treaty signed between Laos and China. In the end, one of the ISDS cases went all the way up to Singapore's highest court and Sanum Investments won a legal case against the Lao government despite both the Lao and Chinese governments attesting that the treaty did not apply to Macau.

[68] Stradbrooke, S. (2016). "Sanum Investments win casino court fight with Laos government." *Calvin Arye.com*, 05 October.

a project may have on the ground and more effectively manage these risks. In short, standards can help complement and improve the risk assessment process undertaken by investors and lenders, while also better protecting the rights of affected people.

Some commonly used international standards include:

- *The Equator Principles* are a risk management framework, adopted by financial institutions, to determine, assess and manage environmental and social risk in projects. While 97 financial institutions have endorsed the Equator Principles internationally, very few financial institutions within the Mekong region have agreed to adhere.
- *ISO 31000:2018* provides a very general framework of standards related to risk management, principles and guidelines, that have been developed by the International Organization of Standardization. The guidelines and can be customized to any organization or context.

Standards and tools specifically for the hydropower sector include:

- *The World Commission on Dams*- In 2000, the World Commission on Dams (WCD) published *Dams and Development: A New Framework for Decision-Making*. In the report the WCD proposed an approach based on the recognition of rights and the assessment of risks, particularly considering the core values of equity, efficiency, participatory decision-making, sustainability and accountability, when building dams. This is the most widely endorsed standard for hydropower.
- *The Hydropower Sustainability Assessment Protocol* is a tool that promotes and guides hydropower projects to improve their sustainability. It is a methodology used to measure the performance of a hydropower project across more than twenty environmental, social, technical and economic topics.
- *The Rapid Hydropower Sustainability Assessment Tool* is a multi-stakeholder dialogue and assessment tool designed to consider hydropower sustainability issues in a river basin context.

Many of the multilateral development banks also have their own safeguard policies, which help them to identify and manage risks, not listed above, that these banks and borrowers are required to follow.

While these international standards can help an investor or lender evaluate some of the risks associated with dams, the above-mentioned standards are only as good as what happens on the ground. An investors' or lenders' commitment to follow these standards does not guarantee compliance, nor do they resolve all the problems associated with dams.

The changing landscape of risk & accountability

> "*I think Thai banks are aware that it is time for them to start paying attention to environmental and social issues in order to avoid unexpected costs, difficulties in project management, and reputational risks.*" — Twatchai Yongkittikul, Secretary-General of The Thai Bankers' Association[69]

The landscape of risk management and accountability is continually changing. International norms have now made it increasingly clear that private investors have the responsibility to ensure that they are carrying out proper due diligence and that their business relationships are not causing harm to people. The *UN Guiding Principles on Business and Human Rights* (UNGPs) requires that all investors and lenders work to prevent and address human rights harm in connection with their own operations, as well as the companies that work with them. This means that companies must avoid causing, or contributing to human rights violations through their activities and their business relationships. When a company has caused impacts, they must address these impacts and provide remedies to those who have suffered, whereas a company which did not cause the impact, but contributed to it, must take necessary steps to stop its contribution to the harm. For companies that are directly linked to a harm, they must use its leverage in the business relationship to ensure that the company causing the harm mitigates the impact, and provides remedies to those affected.

While some commercial banks initially questioned whether the UNGPs applied to them, the Office of the United Nations High Commissioner for Human Rights (OHCHR) clarified the matter in 2017. "The UNGPs apply to all business enterprises, including commercial banks and other entities in the financial sector, regardless of "size, sector, operational context, ownership and structure." Equally, they apply to any company or commercial

[69] International Finance Corporation. "IFC Promotes Sustainability of Hydropower Sector in Lao PDR." Factsheet, undated.

vehicle from any other sector that may be a client of, or enter into a business relationship with, a bank."[70]

As a result, banks have been called upon to apply more dedicated human rights due diligence and prevent harm through their investments. To make due diligence more effective, the OECD released its *2017 Responsible Business Conduct for Institutional Investors*, which provides guidance to institutional investors (like pension funds) on how to identify and respond to environmental and social risks. The OECD is now working on developing due diligence guidance on project finance. National Contact Points, a non-judicial grievance mechanism of the OECD, have also accepted numerous complaints from communities affected by banks and institutional investors who have caused harm.

While the global landscape of risk and accountability is improving and there is growing clarity that investors' responsibilities are intertwined with lenders' responsibilities, these norms do not yet have the necessary teeth required to hold them accountable for their actions. Nor do these norms address the disproportionate power imbalance that continues to allow hydropower developers and investors to profit at the expense of public interest. To fill the voluntary gap, the UN Human Rights Council has formed an intergovernmental working group to develop a binding treaty for transnational corporations and other business enterprises on their obligations with respect to human rights. The binding treaty negotiations are currently underway.

Conclusion

Hydropower development in Laos continues to be marked by privatized gains and socialized losses. The financialization of dam building through complex financial arrangements and contractual structuring has resulted in large profits for the financial sector, while also minimizing some of the risks inherent in dams. At the same time, risk assessments carried out by financial institutions often fail to provide an accurate picture of the full risks and costs involved in dam building. As financial institutions aim to make profits while reducing risks, many of the longer-term socio-economic and environmental risks associated with dams are downplayed or ignored in project documents, and these costly risks will be transferred onto the public to manage.

Until risk assessments for dams are carried out in the interests of the public, and this is reflected in project documents, Laos' policy to use hydropower as an economic development strategy is risky. Laos is not currently able to adequately monitor dam projects, and even if its ability to monitor projects improves, the penalties that can be given for project non-compliance with Lao laws and regulations are insufficient, and unlikely to provide an incentive for investors to improve their performance.

Laos' competing interests as an equity investor and the regulatory agency for dam projects undermines its ability to ensure impartiality and place the public interest first. With financial obligations mounting, Laos will need to repay the money borrowed for the dams in order to avoid external debt distress, while also attempting to remediate hydropower's costly impacts. When all these elements are taken together, it is increasingly clear that a national strategy based on hydropower threatens to undermine Laos' efforts to achieve sustainable development. To stop this risky trajectory, the following recommendations are respectfully made for the Lao government:

- **Reconsider hydropower projects in the pipeline:** Establish an independent review of all proposed hydropower projects' socio-economic and environmental impacts and the consequences these dams will have on Laos' development. The review should also consider alternative energy options. Proposed projects that will not benefit Laos and its people should be cancelled. Proposed projects with transboundary impacts should be reviewed with neighboring governments and their affected people. For projects that do go forward, ensure that project agreements stipulate which actor(s) will be held responsible for mitigating and remediating all negative impacts, including unanticipated risks and longer-term risks.

- **Establish an independent regulatory commission:** An independent regulatory commission with resources, trained staff members and an appropriate legal mandate would improve Laos' oversight of hydropower. The commission would help resolve the conflict of interests between the Laos as equity investor and as regulator. This commission should be responsible for reviewing all stages of planning, enforcing performance standards through onsite inspections, reviewing company reporting and impos-

[70] United Nations High Commissioner for Human Rights (2017). "OHCHR response to request from BankTrack for advice regarding the application of the UN Guiding Principles on Business and Human Rights in the context of the banking sector." Letter. 12 June, p.3.

ing penalties on investors that fail to operate according to best practice. The body should be equipped with the authority to hold all investors (including EDL, EDL Gen and LHSE) and lenders legally accountable for non-compliance and harm caused by project development.

- **Improve transparency and disclosure:** Information that is timely and relevant related to dam projects and their agreements should be disclosed to help improve oversight. This information will ensure that affected communities and the public understand how responsibilities and risks have been distributed in order to improve oversight.

- **Safeguard the rights of affected people:** Ensure that all project investors and lenders uphold the responsibility of protecting affected people's rights and avoid risks that may harm people and the environment. Demand that developers carry out meaningful public consultations with all affected communities at all stages of planning and development and ensure that their right to participate in decision-making is reflected in project planning.

Appendix 1:

Risks of Hydropower Projects[71]

Risks	*Description*	*Mitigation*
Political risks		
Political change	Due to local or national changes in government, policy, legislation, regulation, instability, or unrest	Enact special legislation, sovereign guarantees, political-risk guarantees
Corruption	Due to damage to project implementation or developer reputation caused by effects of corruption	Enact anti-corruption policy, vet contractors, insist on transparent practices, adopt third-party monitoring
Licensing	Due to shortcomings in administration or changes in the legal framework that might delay licensing process	Enact special legislation, sovereign guarantees, political risk guarantees
Transboundary issues	Upstream and downstream riparian rights and treaties, border security issues, etc.	Develop treaties, agreements, water management plans, benefit-sharing agreements, co-development, co-ownership
Economic and financial risks		
Cost escalation	Due to inflation, commodity prices, competition for resources, etc.	Enhance supervision, enhance investigation and design, adopt fixed-price EPC, hedge against price increases of inputs, transfer risk through bonds, contracts, insurance.
Foreign exchange	Due to currency gap between costs and revenues	Transfer risk to contractor, hedging
Electricity market	Due to changes in tariffs, regulatory mechanism for setting prices, etc.	Seek long-term off-take agreement, hedging
Financing package	Due to financing instruments/tenure of available finance	Seek sovereign guarantees, refinance option, low debt interest rate, longer repayment periods
Performance of contractors/ schedule delays	Delays due to inadequate scheduling	Prequalify contractors contract terms and conditions, transfer risk through bonds and insurance, warranties and guarantees, etc.

[71] International Financial Corporation (2015). *Hydroelectric Power: A Guide for Developers and Investors*. February, p. 113-114.

Risks	*Description*	*Mitigation*
Technical risks		
Hydrological	Due to lower or higher-than-expected water flows, floods, unusual seasonal variations	Through hydrology analysis, contingency margin for output, detailed investigation during feasibility and design phases
Geotechnical seismic	Due to geological activity structural problems arise	Detailed analysis, site-specific design
Electro-mechanical equipment performance	Due to underperformance as per project specifications	Supervision, inspection, quality assurance, reliability tests, guarantees and warranties
Construction	Due to construction delays	Supervision, inspection, quality assurance, reliability tests, guarantees and warranties
Operation and maintenance	Due to underperformance of O&M	Detailed O&M contracts, guarantees and warranties
Social risks		
Land and water use conflicts	Due to conflicts with local water users or downstream riparian, water use	Formal agreement with stakeholders, modify design
Resettlement and social unrest	Due to resettlement, local employment and compensation	Formal agreement with stakeholders, modify design
Public health and safety risks	Due to threats to public safety or health during all project phases	Safety management plan, formal agreement with stakeholders, modify project
International objection on social, environmental or cultural grounds		Develop and carry out strategic communications strategy, modify project
Cultural heritage issues	Preservation of historically significant sites and artifacts	Design pre-project activities to investigate, preserve, or modify project
Environmental risks		
Water quality		Modify project, compensate for impacts
Sedimentation		Modify project
Upstream/downstream flow regime		Modify project, compensate for impacts
Wetlands protection		Modify project, compensate for impacts
Biodiversity		Modify project, compensate for impacts, pest management
Fish habitat		Modify project, compensate for impacts

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