urgewald

NEPAL: Tamakoshi V Hydroelectric Project –

Early warning case study

Content

Cover: Tamakoshi River; © Utsavlt

Introduction

This case study on the Tamakoshi V Hydroelectric Project aims to analyze the impacts of the Project during its early stages of implementation in order to identify potential gaps in the accountability framework for the Project in line with the policies of its financier Asian Infrastructure Investment Bank (AIIB) as well as wider impacts of the Project in the context of cumulative impacts of the cascade dams being built or planned in the Tamakoshi River. Further, the case study seeks to look into the Project to determine if it is in line with the environmental sustainability and fiscal stability of Nepal.

The case study was commissioned as part of the → *AIIB Watch campaign* with support from the Germany-based non-profit environmental and human rights organization urgewald. Prabindra Shakya, Founder/Director of the Community Empowerment and Social Justice Network (CEMSOJ) in Nepal led the research for and drafting of the case study with assistance from Alessandro Ramazzotti, Volunteer Researcher at the CEMSOJ. It is based on desk review of the official Project documents, relevant policies of the AIIB and laws and policies of Nepal as well as media, governmental and non-governmental reports on the Project and other associated projects. While CEMSOJ has made initial efforts to reach out to the affected communities of the Project to understand their perspectives of and aspirations with the Project at the ground level, lack of such information gathered so far poses a major limitation for this study. In order to address that, it is planned that this study will later be complemented by field visits to the affected communities.

The Renewable Sector in AIIB

"AIIB's energy sector investments (...) amounted to over USD 5.8 billion over the period 2016–2021, representing 28 percent of AIIB's total regular financing amount and making the energy sector the largest infrastructure sector by investment volume." (AIIB Energy Sector Review, 2022, the p. 10)

Nearly one third of AIIB investments so far went to the energy sector – mainly into fossil energy. The AIIB does not have a Climate Strategy, but an Energy Sector Strategy (ESS). The review of this got approved in December 2022. In the → *evaluation of the ESS*, urgewald pointed out that:

"The review of the ESS sees

- An explicit "No coal policy", but no further clarification on how to operationalize o Stricter criteria on gas, but gas / LNG will stay an acceptable "bridge fuel"
- Renewables are dominated by hydropower (Approved Renewables: 14/ Hydro: 6, Solar: 5, Wind: 2, Geothermal: 1). Big Hydropower stations are is still considered in the energy strategy – no exclusion for non-sustainable types and no definition of 'environmentally sound hydropower' (p.17).

The "strategy" is hardly in line with the AIIB's stated commitment to align its operations with the Paris Agreement by July 1, 2023, and its efforts to achieve its climate finance target by 2025. AIIB commits to appraising the Paris Agreement goals by following the guidance of the joint MDB assessment approach. This though is only designed for direct lending and defining investments in fossil fuels as Paris Aligned project according to Paris Agreement's Mitigation Goals if "Operations economic feasibility depends on external fossil fuel exploitation" (e.g., a railway line that will have a significant income from the transport of coal from a coal mine) or "operations whose economic feasibility depends on existing fossil fuel subsidies (e.g., a fishing fleet).

This case study on the Tamakoshi V Hydroelectric Project shows clearly that the AIIBs strategy to finance hydropower is not based on climate protection but on pushing its Renewable Energy portfolio. The case study shows that the Project is not grounded in any additional need for hydropower generated energy domestically while the export of the produced energy is also not certain. Also, we again want to highlight the several existing studies which can prove big hydro as non-sustainable renewable energy.[1] Although Tamakoshi V does not need to build a new dam and is within the OPIC definition of "upgrading of existing facilities", the Project will add to the cumulative harming effects of the existing facility – the Upper Tamakoshi Hydroelectric Project, – , which is the largest hydropower project in Nepal. Since decades, civil society together with the harmed communities have highlighted the devastating environmental, social and climate-related consequences of conventional big hydropower dams. The AIIB needs to explicitly exclude greenfield conventional dams and the expansion of projects.

1 Contested waterscapes in the Mekong Region : hydropower, livelihoods, and governance, ed. by François Molle, Tira Foran, and Mira Käkönen; Overseas Private Investment Corporation Environmental Guidance Renewable Energy - Hydro Projects. European Commission, Directorate-General for Environment, Guidance document on the requirements for hydropower in relation to EU nature legislation : a summary, Publications Office, 2018.

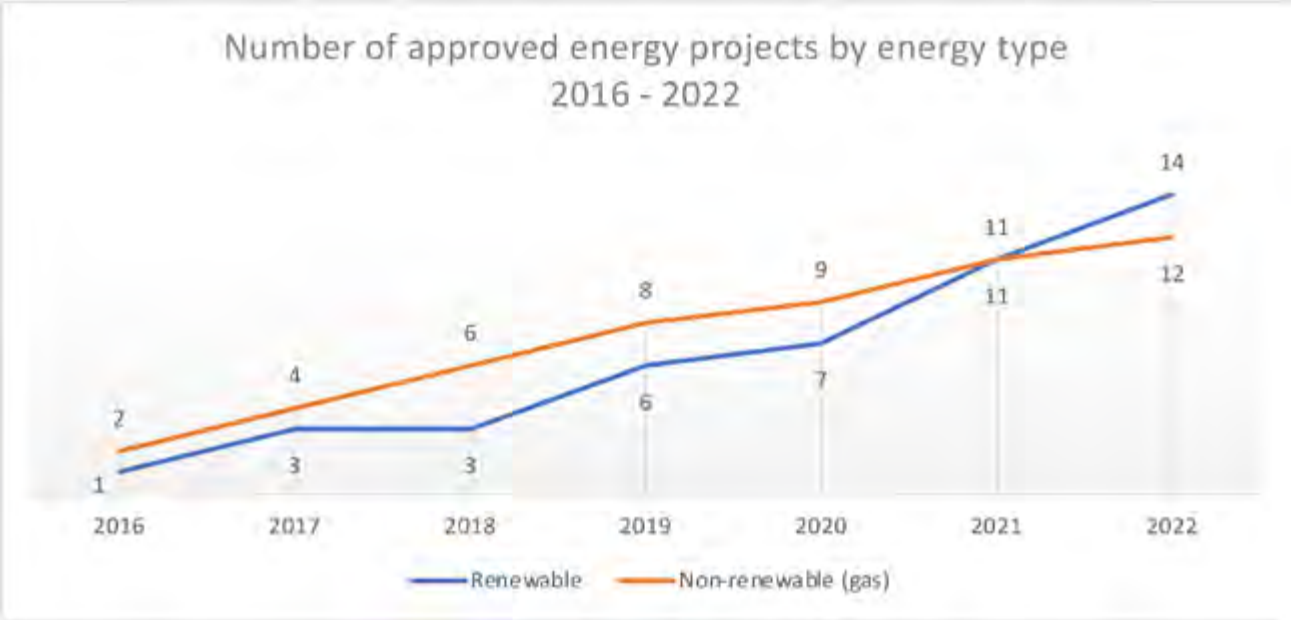
Why we have chosen the case?

Tamakoshi V Hydroelectric Project was chosen because it is already quite some time in the pipeline for AIIB financing although the amount would allow for a presidential direct approval. We wanted to find out why this Project is not getting approved for four years now, why another 2019 grant was approved instead and to potentially prevent most serious harm. Therefore, our questions where

a) Status of the Project, including the → *2019 approved grant* and the **EIA approved.**

b) Evaluation of the Project vis-à-vis Nepal`s NDC plans net zero by 2050 and electricity market: **Is this Project really necessary for the announced purpose?**

c) **Debt:** How stable is the fiscal status of the country-can Nepal afford to take another loan for the Project?



The case

Project data

- NEA started planning in 2014/ announced as „top priority project"/ only in 2021 preparatory works started
- Implementer subsidiary of NEA/ design by Tractebel Engineering GmbH of Germany / capacity installed 99.80 MW through four units

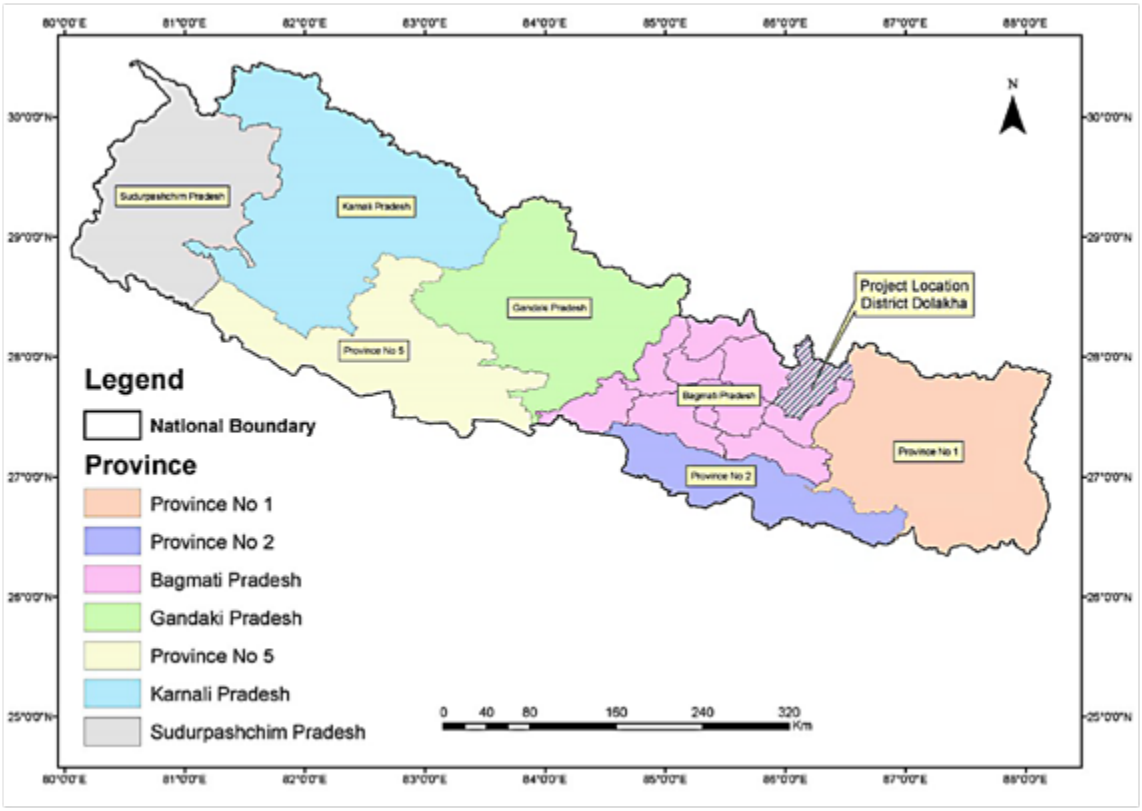
Type: run-of-river hydropower project
Capacity installed capacity of 99.80 MW/ max. generated cap. 94.8 MW
Category: A, significant environmental and social impacts, all AIIBs Environmental and Social Standards are applicable to the project (ESS 1, ESS 2, and ESS3).

Financing

Proposed: AIIB sovereign-backed loan (since December 2018 until to date). Total costs USD 165 Mio

- AIIB loan USD 112 million
- NEA USD 53 million

Approved: January 2019, **AIIB approved a grant of USD 900,000** for the Project under its **Project Preparation Special Fund (PSPF)**.



Location of the project (Source: https://tkjvc.com.np/wp-content/uploads/2022/11/Executive-Summary-of-TKV.pdf)

The Tamakoshi V Hydroelectric Project is a run-of-river hydropower project planned on the Tamakoshi river within the Gaurishankar Conservation Area in the Dolakha district of the Bagmati province in eastern Nepal. The Project is located approximately 170 km northeast of the country's capital city of Kathmandu and about 40 km from the district headquarter of Charikot Bazaar. The entire project area lies in Bigu and Gaurisankar rural municipalities.

The project is conceptualized as a tandem (slave) project in a **cascade scheme** with the 456 MW → *Upper Tamakoshi Hydroelectric Project* (UTKHEP)[2] – the largest hydropower project so far in Nepal which started operating in August 2021, took 10 years to complete and saw massive costs and time overruns. The intake site / underground interconnection system with Upper Tamakoshi tailrace outlet is located in Gongar whereas the **underground powerhouse** lies at the right bank of Tamakoshi River just downstream of the Suri River confluence with Tamakoshi River.

In 2014, the Nepal Electricity Authority (NEA), the sole utility provider under the Ministry of Energy of the Government of Nepal, had initiated the process to develop the Tamakoshi V Hydroelectric Project, which was supposed to require less time and money to be built, given the absence of dam and entry route.[3] As reported in 2015, it was included among its top four priority projects;[4] however, preparatory works – i.e., construction of the camp site – only started in 2021.[5] Tamakoshi Jalvidhyut Company Ltd. (TKJVC), a subsidiary company of the NEA established in 2017, is implementing the Project.

Location of the project (Source: Tamakoshi Jalvidhyut Company Ltd website)

2 See Upper Tamakoshi Hydroelectric Project
3 Rajendra Manandhar, Upper Tamakoshi Hydropower Project: Feasibility study begins to produce extra power (May 4, 2014), The Kathmandu Post.
4 Power lines NEA's priority (March 1, 2015), The Kathmandu Post.
5 Work starts on Tamakoshi V cascade power project (October 13, 2018), The Kathmandu Post; also, Construction of 100 MW Tamakoshi-5 begins (February 17, 2021), Nepal Energy Forum.

Tamakoshi Nadi River in Nepalese Himalayas; © Daniel Prudek/Getty Images

Capacity

Tamakoshi V Hydroelectric Project will have the installed capacity of 99.80 MW through four units while the rated or maximum generation capacity is 94.8 MW.[6] In July 2019, Tractebel Engineering GmbH[7] of Germany submitted the Detailed Design Report of the Project, with the detailed engineering design and tender document preparation, to the NEA.[8]

Financing

There are two AIIB involvements in the Tamakoshi V Hydroelectric Project:

A) AIIB Sovereign-backed loan (proposed)

The first – for a sovereign-backed loan – remains as "proposed" (the concept of the AIIB project number 000261 was approved on 18 December 2018).[9] Of the total estimated project cost of USD 165 million, the project's sovereign-backed loan amount is USD 112 million while the remaining USD 53 million is to be provided by the Government of Nepal/NEA.[10]

The proposed project aims "to reduce the supply and demand gap by providing additional power to the national grid", and to "help stabilize the grid by contributing to meeting the daily peak demand".[11] The loan will finance to different extents the four components of the Project, namely:

1. Civil and Hydromechanical Works;
2. Electromechanical, Transmission Line, and Infrastructure Works;
3. Implementation of Environmental and Social Management Plans; and
4. Construction Supervision, Implementation Support, Technical Assistance and Monitoring and Evaluation of the Project Impacts and ESMP.[12]

While the Project remains proposed for AIIB financing on the bank's website to date, funding for the Project has reportedly been secured from domestic sources. In July 2021, a tripartite memorandum of understanding was signed between the NEA, the TKJVC and Nepal's Employees Provident Fund (EPF) for loan financing for the Project, which is expected to materialize investment of NPR 16.45 billion. Under the agreement, the EPF will invest NPR 13.74 billion as loan in the Project, which will cost the total of NPR 21.14 billion after the interest accrued.

6 See Tamakoshi Jalvidhyut Company Ltd. The official documents of the Project on the company website puts the Project capacity at 99.8 MW while the figure varies in news reports and in the Project webpage of the Asian Infrastructure Investment Bank (AIIB).
7 See Tractebel, Tamakoshi V HEP, 99.8 MW, Nepal
8 Tamakoshi V Hydroelectric Project - Detailed Engineering Design and Tender Document Preparation (July 2019), Tractebel.
9 Nepal: Tamakoshi V Hydroelectric Project (TV-HEP) (Project number: 000261), AIIB.
10 Nepal: Tamakoshi V Hydroelectric Project (TV-HEP) (AIIB-000261), Early Warning System; also, Project Summary Information (PSI) – Project number 000261, Section V, AIIB.
11 Ibid.
12 Ibid, p. 2.

Remaining funds for the Project will be raised by issuing shares of the company to the general public as part of the People's Hydropower Program. The tripartite loan agreement was subsequently signed in May 2023.[13]

Further, as per news reports, the Project will have low cost of energy production, which expected to be about NPRs 160 million per MW. That is because it will not need a dam, nor a sand thawing ponds (descender), as it will receive water from the UTKHEP through an underground tunnel. It will also use the other infrastructure built for the UTKHEP, such as the access roads. As a result, its direct impacts on the environment and on the local populations is also expected to be lower than other hydropower projects.[14]

B) AIIB grant (approved)

For the second Tamakoshi investment AIIB is involved, the Government of Nepal

> "requested a grant from the Bank's Project Preparation Special Fund (PSF) to support the additional preparation required by the Bank's policies, including additional technical reviews and environmental and social studies … [which] will be implemented by NEA."[15]

In January 2019, the AIIB separately approved a grant of USD 900,000 for the Project under its Project Preparation Special Fund (PSPF)[16] to

1. mobilize a Panel of Technical Experts to ensure the soundness of the engineering design; and
2. enhance quality of project preparatory activities and processes to meet the Bank's Environmental and Social Policy.[17] In October the same year, according to a news report, the Austrian Government had also expressed interest in contributing to the Project, but there is no available evidence about its further involvement.

According to the NEA, the grant of the AIIB is aimed at financing the following studies:

1. Biodiversity Action Plan (BAP);
2. Supplemental Environmental and Social Documentation (SESD);
3. Panel of Technical Expert (PTE);
4. Free, Prior, Informed Consultation (FPICon) Process.[18]

Bidding companies

As per NEA`s annual report for fiscal year 2020/2021, the company Hagler Bailly Pakistan was awarded the contract to conduct the studies for the Biodiversity Action Plan (BAP) and the Supplemental Environmental and Social Documentation (SESD) that have been completed and submitted to the TKJVC, but they are not disclosed yet.[19]

In **January 2023**, the TKJVC had shortlisted two Chinese companies, namely Sinohydro Corporation Limited and China Gejuwa Group Company Limited, **for the civil works and hydro-mechanical equipment** of the Project.[20] However, project implementor TKJVC **cancelled the bids of the two companies** after the prices quoted by them came to be higher than the Project's estimated costs.[21]

Most recently, on **26 June 2023**, the TKJVC has again invited bids for the civil works and hydro-mechanical equipment of the Project, which will reportedly be constructed in two packages:

1. First package for civil works and hydro-mechanical equipment, including **the construction of the underground powerhouse and an 8km long tunnel** that connects it the UTKHEP, and
2. Second package for electro-mechanical works, including the construction of a **2km 220kV transmission line** that will connect the Project to the national grid.[22]

13 There are inconsistencies in the figures of investment amounts reported in the media. So, the most reported figures have been used. See Himal Sanchar; Tripartite MoU signed to invest in Tamakoshi-V hydropower project (July 26, 2021), Tamakoshi fifth, 16.45 billion investment approved (June 7, 2022), My Republica; Govt approves investment of Rs 25.92 billion for construction of Tamakoshi-5 and Upper Karnali hydropower projects (June 7, 2022), MyRepublica; Tripartite Loan Agreement Signed by NEA, EPF, and Tamakoshi Hydropower Company To Fund Tamakoshi V Project (May 22, 2023), New Spotlight. EPF injects Rs 13.74 billion loan for Tamakoshi-V Hydropower Project (May 23, 2023), The Himalayan Times.

14 Ibid.

15 Ibid.

16 Nepal: Tamakoshi V Hydroelectric Project, AIIB.

17 Ibid.

18 NEA's Annual Report for the FY 2020/2021, p. 194.

19 Ibid, p. 195; the reports mentioned herein could not be found online. However, the Contract Award Notice was published, outlining the details of the contract with Hagler Bailly Pakistan.

20 99.5 MW Tamakoshi-5 shortlists two Chinese companies for the first phase construction (January 31, 2023), Urja Khabar. Two Chinese firms shortlisted for Tamakoshi V project construction (February 1, 2023), The Kathmandu Post.

21 99.4 megawatt Tamakoshi V project construction bids cancelled (March 31, 2023), The Kathmandu Post.

22 Dinesh Khadka, १०० मेगावाटको तामाकोसी-५ जलवद्युत नर्िमाणको लागि दुई चनियिाँ कम्पनी सर्टलस्टिमा (January 26, 2023), Bizmandu. See TKJVC website for the latest invitation for bids.

Timeline of key developments in the Project

2011	In January 2011, public consultation meetings were organized in the affected municipalities. Seven meetings were conducted in the affected municipalities, which were attended by about 54 persons.
2014	Nepal Electricity Authority (NEA) initiates the process for developing the Tamakoshi V Hydroelectric Project as a lower structure of cascade to the Upper Tamakoshi Hydroelectric Project (UTKHEP).
June 2016	Nepal's Ministry of Environment of Nepal approved the "regulatory" Environmental Impact Assessment (EIA) of the Project as per the Project Summary Information published by the Asian Infrastructure Investment Bank (AIIB). However, the EIA of the Project is not yet available in public domain and even could not be found on the websites of the Ministry or the AIIB.
3 March 2017	Tamakoshi Jalvidhyut Company Ltd. (TKJVC), a subsidiary company of the NEA is established to develop the Project. An undated Feasibility Study of the Tamakoshi V Hydroelectric Project is available on the website of the TKJVC, which contains a chapter on Environmental Impact Assessment and seems outdated as the references made in the study are from surveys in 2009 or data from the UTKHEP in 2008.
18 December 2018	AIIB approves the concept of the Project (number 000261) for possible financing of up to USD 112 million of the total estimated cost of USD 165 million. AIIB has published a Project Summary Information on 18 May 2021 while the Project remains "proposed" for AIIB financing to date.
17 January 2019	AIIB approves USD 900,000 for the Project under its Project Preparation Special Fund (PSPF) to ensure the soundness of the engineering design; and enhance quality of project preparatory activities and processes to meet the Bank's Environmental and Social Policy.
July 2019	Tractebel Engineering GmbH of Germany submits the Detailed design report of the Project to the NEA.
26 July 2021	A tripartite memorandum of understanding was signed between the NEA, the TKJVC and Nepal's Employees Provident Fund (EPF) for loan financing for the Project, which is expected to materialize investment of NPR 16.45 billion.
26 June 2023	TKJVC re-invited the bids for the civil works and hydro-mechanical equipment of the Project after it cancelled the bids of the two Chinese companies, namely Sinohydro Corporation Limited and China Gejuwa Group Company Limited, shortlisted for the works after the prices quoted by them came to be higher than the Project's estimated costs.

Geopolitics, debt status, energy demand and Tamakoshi V Hydroelectric Project

As the financing for the Tamakoshi V Hydroelectric Project from the AIIB remains proposed and the bids of the Chinese banks for the Project have been cancelled, it raises suspicions that the Project might have been mired with the geopolitics of Nepal's rivers[23]. It is of open knowledge in Nepal that **India, which is so far the only available foreign market for Nepal's hydropower, will not buy electricity generated with Chinese involvemen**t. For example, India has not agreed to buy power even from the UTKHEP, which was constructed with financing from domestic sources within Nepal but with civil construction contracted to Sinohydro.[24] Thus, the potential to sell the power to India might have been a factor in the generation of funds for the Tamakoshi V Hydroelectric Project from domestic sources.

At the same time, securing funds for the Project through domestic resources also aligns with the aims of the Government of **Nepal to raise more internal debt than foreign loans**. Nepal's public debt has been increasing every year. It has reached NPR 2 trillion by mid-February of fiscal year 2022/23 and has more than tripled in the last eight

23 https://www.nepalitimes.com/here-now/geopolitics-of-nepal-s-rivers
24 Suhasini Haidar, Concerns over Chinese contractors holds up expansion of Nepal-India power trade for the region (December 18, 2022), The Hindu.

Interconnection System of Tamakoshi V Headrace Tunnel and Upper Tamakoshi Tailrace. (Source: https://tkjvc.com.np/)

years.[25] Of that, the **internal debt** stood at NPR 996 billion. In 2022, Nepal's public external debt is estimated to have amounted to around 43.8 percent of gross domestic product. In 2023, Nepal's debt-to-GDP ratio is projected to be around 47.8 percent.

Borrowings from multilateral donor agencies such as the World Bank (WB) and Asian Development Bank (ADB) account for 88.78 percent of the total external loans. At the same time, officials have been less concerned about increasing debt but more concerned with not increasing revenue.[26]

Further, the **Project has been promoted as low-cost** undertaking to meet the increasing energy demand of the country. As of 2022, total installed power plant capacity was 2265 MW, out of which, 74 MW is off-grid, and among the grid connected power, 49.76 MW is solar, 53.4 MW is thermal, 6 MW is biomass, and the rest 2082 MW is hydro. By April 2023, the total installed capacity of electricity has reached more than 2,532 MW, which was projected to exceed 2,800 MW by mid-July. Although the electricity consumption in Nepal has also been steadily increasing, demand during peak hours remains close to 1800 MW and 1000-1450 MW during off peak hours.[27]

With majority of domestic generating plants being of run-of-the-river nature, supply availability from these plants has high seasonality with generation only one third of installed capacity during winter and dry months. This supply availability is more than necessary in wet season and not enough during dry months, which is why import from India remains imperative to manage the supply during those months while Nepal has begun exporting limited electricity to India during wet season. Thus, the Projects like Tamakoshi V Hydroelectric Project can only be viable either if domestic consumption can be drastically increased with more electrification of rural areas and if more exports to India can be facilitated, which has been under discussion between the two governments but tough to sell to India.

25 Prithvi Man Shrestha, Nepal's debt nearly triples in the last five and half years (March 2, 2021), The Kathmandu Post.
26 Dilip Poudel, Nepal has public debt of over Rs 2 trillion (March 7, 2023), MyRepublica.
27 Nepal's electricity production reaches 2,689.83 MW; capacity to cross 2,800 MW by this FY end (April 15, 2023), MyRepublica; Nepal Energy Outlook 2022 (August 2022), Kathmandu University, Nepal Energy Foundation, Niti Foundation.

Himalaya Mountains of Nepal; © Vyacheslav Argenberg / http://www.vascoplanet.com/

Project impacts

Despite its low need for infrastructure, the Tamakoshi V Hydroelectric Project will likely have significant impacts on local populations and the environment. As per the AIIB, **in June 2016**, the Ministry of Environment of Nepal approved the "regulatory" Environmental Impact Assessment (EIA) of the Project, stating that

> "the Project is 'environmentally feasible and the identified impacts in physical, biological, socioeconomic and cultural environment are mostly ranked as low to moderate and these impacts could be managed to an acceptable level by applying proper preventive, mitigation and rehabilitation measures'".[28]

However, **the EIA of the Project (also referred to on the website of the TKJVC) is not yet available in public domain and even could not be found on the websites of the Ministry or the AIIB**. On the other hand, the AIIB has assessed the Project's environmental and social category as "A", meaning that "it is likely to have significant adverse environmental and social impacts that are irreversible, cumulative, diverse or unprecedented".[29] Usually, category A projects mean that it has significant environmental and social impacts. **While the EIA is not available for review, the following analysis has been drawn from the Project Summary Information on the AIIB website and the environmental impact assessment chapter in the feasibility study of the Project, which seems outdated as the references made in the study are from surveys in 2009 or data from the UTKHEP in 2008.**

Impacts on local populations and FPIC

According to the AIIB's Project Summary Information for the Tamakoshi V Hydroelectric Project, the land required to build the Project facilities should not be more than 28.5 ha. urther, as per the Project Summary, 35 households (that is, 177 people) are "tentatively estimated to be affected" – mostly through economic displacement; only two of these 35 households would be physically displaced.[30]

Due to its impacts on the local communities and the likely occurrence of physical and economic displacement, the project needs a Free, Prior, and Informed Consultation (FPICon) process, the peculiar consultation process of the AIIB that falls below the internationally recognized requirement to obtain the Free, Prior, and Informed Consent (FPIC) of indigenous peoples affected by a project.[31] In line with this

28 Project Summary Information (PSI) – Project number 000261, Section IV, AIIB.
29 AIIB's Environmental and Social Framework (February 2016, amended February 2019 and May 2021), Chapter on Environmental and Social Policy, Section V(A), Para 18(1), p. 16.
30 Project Summary Information (PSI) – Project number 000261, Section IV, AIIB.
31 Ibid; "FPICon is an enhanced consultation process that requires documentation of a mutually accepted process of consultation between the Project and the concerned Indigenous Peoples and evidence of Broad Community Support of these communities on the outcome of the negotiations".

requirement, **public consultation meetings were organized in the affected municipalities as far back as January 2011, as reported in to the Project's Feasibility Study**.[32] Seven meetings were conducted in the affected municipalities, which were attended by about 54 persons.[33]

Also, public notices were published in the national newspaper Gorkhapatra Daily, and posted in public places to seek the affected people's insights on the project.[34] The comments that were brought up by the participants to the consultations mostly related to benefit-sharing mechanisms (i.e., shares in the project's company, construction of roads, schools, health posts, as well as rural electrification infrastructure, local employment opportunities and skill-training workshops), involvement of the local population in the decision-making process, and responsible use of natural resources and care for the environment.[35]

The local population in the project area is mostly dominated by indigenous Tamang (39.9%) ethnic community, followed by Chhetri (19.38%) and Sherpa (8.93%).[36] Besides Tamang and Sherpa, there are also indigenous or Janajati groups in the Project area, which are Gurung, Newar and Thami, as well as occupational caste groups (so-called low caste Dalits) like Kami, Damain and Sarki.[37] The majority of them are Hindus and Buddhists.[38] There are also important religious places in the Project impact area, which are popular pilgrimage destination. The main ones are: Dolakha (Bhimeshwor), Kalinchowk (Bhagawati), Shailungeshwor danda (Mahadev), Bigu and Lamabagar (Tashi Gumba), Lapche Gaun, and others.[39]

Majority of the households in the Project area possess land parcels smaller than 0.5 ha; only 4.48% possess more than 1.5 ha. The average price of land according to the field study is estimated to be NPRs 980,000/ha.[40] The majority of these lands is used for agricultural purposes, and the major produce are paddy, maize, millet, potato, barley, seasonal vegetables, as well as banana, guava, and lemon. However, land conditions differ greatly within the Project affected area, depending on the altitude, vicinity of water sources, and land quality.[41] Most of the surveyed households are also engaged in livestock farming for both business purposes and family sustainment, and the major types of livestock are goats, cows, buffalos, sheep, chauri, poultry, and yak.[42] Lesser number of households is engaged in trading activities, and tourism constitutes a relevant part of the economy in the area. In recent years, many young people from the area have moved to other countries to work as laborers.[43] The Feasibility Study suggests ten community development activities that would help to share the benefits and compensate the losses from the project. These activities are mostly focused on irrigation infrastructure, rural electrification, road improvement, and environmental conservation.[44]

Impacts on the environment

The environmental impacts of the Tamakoshi V Hydroelectric Project are not reportedly immense given that it does not require as much infrastructure as other hydropower development projects. However, it is located within the Gaurishankar Conservation Area – an area of "outstanding biodiversity that also serves as a biological corridor connecting two crucial protected areas of the country, Sagarmatha National Park and Langtang National Park" established in January 2010.[45] At the same time, "there could be significant cumulative impacts, resulting in complete conversion of the Tamakoshi aquatic ecosystem into modified habitat", due to the intensive hydropower development on the Tamakoshi river basin – totaling a production of 586 MW, and including the huge 456 MW UTKHEP.[46]

32 Feasibility Study Report – Tamakoshi-V Hydroelectric Project, Project Development Department, Chapter 11 – Environmental Impact Assessment, Section 3, Para 11.3.3, p. 11-4.
33 Ibid.
34 Ibid, Para 11.3.2, p. 11-3.
35 Feasibility Study Report – Tamakoshi-V Hydroelectric Project, Project Development Department, Chapter 11 – Environmental Impact Assessment, Table 11.1, pp. 11-4–11-6.
36 Ibid, Para 11.4.3.1.2, p. 11-16.
37 Ibid.
38 Ibid, Para 11.4.3.1.3.
39 Ibid, Para 11.4.3.1.8, p. 11-20.
40 Ibid, Para 11.4.3.1.10.
41 Ibid, Para 11.4.3.1.11, p. 11-21.
42 Ibid, Para 11.4.3.1.12.
43 Ibid, Para 11.4.3.1.13, p. 11-21 and Para 11.4.3.1.14, p. 11-22.
44 Ibid, Table 11.5, p. 11-25.
45 Gaurishankar Conservation Area Project (GCAP), National trust for Nature Conservation, Government of Nepal.
46 Project Summary Information (PSI) – Project number 000261, Section IV, AIIB.

The topography of the site where the Project is being constructed mostly consists of steep rocky and bushy slopes with riverside lands partly used for agriculture. The watershed is mostly intact, although in some places the disturbance caused by the construction of roads and hydropower projects (i.e., UTKHEP and Siprin Khola hydropower project) can be observed.[47] Most of the noise and air pollution in the area can be attributed to the same reasons.

The major forest types found in the core Project area are Chilaune (*Schima wallichi*) and Utis (*Alnus nepalensis*). Other forest types in the surrounding areas are hill Sal forest, Pine forest, Schima-Castanopsis forest, Rhododendron forest, Alder forest, lower temperate mixed broad leaf forest, and upper temperate mixed forest.[48] The Project will affect seven community forests, covering a total area of 1111.47 ha (that excludes the Bimira Tatopani community forest – the data of which were not available).[49] These community forests belong to 1,040 households in total (again, excluding Bimira Tatopani), and are mostly used for grazing purposes, and to get the firewood that is used for cooking, heating, and ceremonial purposes, and the timber that is used for construction purposes.

Many plants found in the forests around the Project site are also used as medicines, or as a source of food. For instance, medicinal plants include the Kurilo (*Asparagus spp.*), Hadchur (*Viscum album*), Harro (*Terminalia chebula*), Barro (*Terminalia bellirica*), Amala (*Emblica officinalis*), Chutro (*Berberis asiatica*), and Titepati (*Artemisia indica*) while common edible plants are the Fruits of Kaphal (*Myrica esculenta*), Ainselu (*Rubus ellipticus*), Kera (*Musa paradisiacal*), Amba (*Psidium guajava*), and Amala (*Phyllanthus emblica*). They are used at the local level, and not commercialized.[50] There is only one protected flora species, which is the Simal (*Bombax ceiba*).[51]

Majority of birds and mammals in the Project impact area is migratory, and not confined to the area. Moreover, locals explained that due to forest degradation in the past years, the fauna has notably decreased. Therefore, the impacts of the Project on the local fauna should reportedly not be enormous. There are three protected mammal species, namely the Leopard (CITES I), the Rhesus Monkey (CITES II), and the Jackal (CITES III). There are no protected bird species in the Project affected area.[52] The major fish species in the Tamakoshi river are the Asala (Schizothorax sp), the Katle (*Neolissocheilus hexagonolepis*), the Buduna (*Garra gotyla*), and the Chuchche (*Xenentodon cancila*).[53]

Need for cumulative impact assessment

The EIA chapter contained in the Feasibility Study of the Project highlights various impacts – both positive and adverse – on the physical environment, on the biological environment, and on the socio-economic and cultural one, dividing them into "construction phase" and "operation phase". The most worrying adverse impacts are: the impacts on the local microclimate; the increase of air, water, and noise pollution in and around the Project area; the water conflicts among local populations; the impacts on endangered species, and on the local biodiversity in general; the possible encroachment of community forests; the loss of forest land and the degradation of animals' habitat; the impacts on fishes' migrations; as well as the loss of agricultural lands (mainly due to the construction of the powerhouse), the impacts on vulnerable groups, the impacts on socio-cultural practices (such as religious festivals), occupational safety hazards related to construction activities, the conflict with workers hired from other regions or countries, and the changes to the community ties and structures as a consequence of the impacts on the local economy.[54]

Moreover, the Feasibility Study of the Project states that it "will have cumulative impacts on the physical, biological and socio-economic and cultural environment due to the presence of UTKHEP. The cumulative impact will be especially from the long-dewatered length of approximately 20 km".[55] As stated earlier, the Project Summary Information of the AIIB similarly states that "since the basin is experiencing rapid hydropower development, with 586MW

47 Feasibility Study Report – Tamakoshi-V Hydroelectric Project, Project Development Department, Chapter 11 – Environmental Impact Assessment, Para 11.4.1.3, p. 11-7.
48 Ibid, Para 11.4.2, p. 11-11.
49 Ibid, Table 11.1, p. 11-12.
50 Ibid, Para 11.4.2.2, Sub-para (b) and (c), p. 11-13.
51 Ibid, Sub-para (d), p. 11-14.
52 Ibid, Para 11.4.2.3.3, p. 11-14.
53 Ibid, Para 11.4.2.3.3, p. 11-15.
54 Feasibility Study Report – Tamakoshi-V Hydroelectric Project, Project Development Department, Chapter 11 – Environmental Impact Assessment, Section 5, pp. 11-26–11-27.
55 Ibid, p. 11-28.

Sardar sarovar dam in the Indian state Gujarat. Public pressure on the World Bank after forced displacement due to the construction of the dam forced the WB 1993 to establish the first institutional accountability mechanism; © Vijayakumarblathur

under construction in the GCA [Gaurishankar Conservation Area], including the UTKHEP (456MW), there could be significant cumulative impacts, resulting in complete conversion of the Tamakoshi aquatic ecosystem into modified habitat."[56]

The UTKHEP has already greatly affected the river basin's environment, and the Tamakoshi V Hydroelectric Project will only augment these impacts. Such impacts needs to be further assessed cumulatively by the Project implementer as well as the NEA and other concerned authorities and stakeholders such as the AIIB, including with effective and meaningful participation of the affected communities. However, there is no report to suggest that such a cumulative impact assessment is even being considered.

Requirements for compliance of Tamakoshi V Hydroelectric Project with AIIB Standards

The AIIB categorizes the project as environmental and social "Category A", meaning that it has significant environmental and social impacts. Thus, all of its Environmental and Social Standards (ESSs) are applicable to the project, namely the ESS 1 – Environmental and Social Assessment and Management, the ESS 2 – Involuntary Resettlement, and the ESS3 – Indigenous Peoples.[57] Due to that, a number of documents must be drafted and disclosed, such as the Environmental and Social Management Planning Framework (ESMPF), the Biodiversity Action Plan (BAP), the Land Acquisition and Livelihood Restoration Plan (LALRP), the Stakeholder Engagement Plan including Grievance Redress Mechanism, and the Vulnerable Communities Development Plan (VCDP).[58] However, none of those documents appears on the website of the AIIB to date, and only the "Terms of Reference (TOR) for Consultant Services for the preparation of Biodiversity Action Plan" can be found on the NEA's website.[59]

Similarly, a shortlisting notice for Expression of Interests for providing consulting services for Free, Prior and Informed Consultation (FPICon) dated 19 October 2020 is available on the NEA website.[60] NEA, in its annual report for the fiscal year 2020/21, has reported that evaluation of the proposals for the FPICon study has been completed and contract will be signed soon with the selected consultant.[61] Also, no further information is available about the study.

In above context, failure to effectively disclose the necessary Project documents, including the EIA and other Project plans or studies as they are approved, is con-

56 Project Summary Information (PSI) – Project number 000261, Section IV, AIIB.
57 Project Summary Information (PSI) – Project number 000261, Section IV, AIIB.
58 Ibid.
59 See, Terms of Reference (TOR) for Consultant Services for the preparation of Biodiversity Action Plan, (undated) NEA.
60 See, Tamakoshi Jalvidhyut Company Limited Tamakoshi V Hydroelectric Project - EOI shortlisting notice (October 19, 2020)
61 NEA's Annual Report for the FY 2020/2021, p. 195

Der Trishuli-Fluss in Nepal/The Trishuli river in Nepal; © Nora Sausmikat

cerning even when the Project's preparatory works have reportedly started. That can be well against the AIIB's policies on disclosure and does not bode well for the possible approval of the AIIB loan for the Project although the Bank only requires that the necessary environmental and social documentation shall be disclosed "for Category A Projects, sixty (60) calendar days prior to consideration of the Bank's financing for approval".[62]

Moreover, disclosure of the Project documents is essential to conduct the FPICon process in "good faith" as required by the AIIB's Environmental and Social Framework (ESF). The ESF also requires the FPICon process to be adequately documented, and to reflect the affected people's broad support to a project.[63] It should be reiterated that the FPICon requirement of the AIIB falls short of international human rights standards that require obtaining Free, Prior and Informed Consent (FPIC) of concerned indigenous peoples for projects or decisions affecting them as well as the relevant standards of other multilateral banks. With the track record of the NEA and the Government of Nepal to ignore or deny obtaining FPIC of the affected indigenous communities in various hydropower and other projects in Nepal, failure to effectively disclose the Project information shows a bad sign towards respect for requirement of even their FPICon under the Project. The Feasibility Study of the Project, which is the only disclosed document to provide a good overview on the impacts and activities of the Project, refers to public consultations undertaken more than a decade ago and thus is clearly outdated.

In November 2022, the AIIB approved its new Energy Sector Strategy (ESS), which recognizes the importance of renewable energies "for a swift, smooth, and just transition to a clean and smart power system".[64] The **hydropower sector plays a major role in this transition as per the AIIB**. The Strategy states the support of the AIIB to "technically, economically, and financially viable and environmentally and socially sound" hydropower.[65] This position is in line with the ongoing international trend of supporting cleaner and "greener" energy production modes.

However, the AIIB should pay more **attention to the environmental and social impacts of the projects it finances, such as the Tamakoshi V Hydroelectric Project**. That means, it must properly evaluate if the Project is "environmentally and socially sound" before proceeding to further invest in it. Otherwise, it will breach its own policies causing harms to the environment and the people, for which it should be accountable.

62 AIIB's Environmental and Social Framework (February 2016, amended February 2019 and May 2021), Chapter VII, Section A, Para 65.2, p. 33.
63 See AIIB's Environmental and Social Framework (February 2016, amended February 2019 and May 2021), Chapter VII, Section B, Para 69, p. 34.
64 AIIB's Energy Sector Strategy: Sustainable Energy for Tomorrow (November 22, 2022), Para 52, p. 17.
65 Ibid.

Conclusion

In December 2022, the AIIB approved the review of its energy strategy. Hydropower takes a prominent role as a "renewable energy source". Although the impacts of the Tamakoshi V Hydroelectric Project might not be as significant as other hydropower projects in Nepal as reported by its developer so far, there are several issues with the Project as follows that are concerning in line with AIIB Standards and beyond.

Outdated feasibility study and Information disclosure:

This study found out that there has not been effective information disclosure and adequate transparency in the Project`s design and ongoing preparatory phases. **The Feasibility Study of the Project is very much outdated. The approved EIA of the Project (also referred to on the website of the TKJVC) is not yet available in public domain** and even could not be found on the websites of the Ministry or the AIIB. Following project documents are also not publicly available and must be drafted or disclosed:

- the Environmental and Social Management Planning Framework (ESMPF),
- the Biodiversity Action Plan
- the Land Acquisition and Livelihood Restoration Plan (LALRP),
- the Stakeholder Engagement Plan including Grievance Redress Mechanism, and the
- Vulnerable Communities Development Plan (VCDP).
- The study on the FPICon process (reportedly supported under the AIIB grant).

That does not bode well for the forthcoming implementation stages of the Project, particularly with the lower requirement of the AIIB's safeguards for the Project affected indigenous and other communities.

Participation and consent of the affected communities:

There were minimal consultations undertaken with the local communities for the Project twelve years ago. That is again inadequate and not recent. The AIIB grant approved in 2019 foresees FPICon, which has not happened until today. That even falls short of international human rights obligations of Nepal to obtain FPIC of the affected communities. The affected indigenous and local communities should be better involved since the design and preparation of the project is not known by them. They should be allowed to express their views based on publicly available, up to date information. Until this essential requirement is met, the AIIB should not proceed with the financing of the Project if is going to. With the minimum information the stakeholders have, the significance of the project seems undebated among them, including the affected communities (as learnt in our initial conversations with some representatives). The communities' representatives should be effectively involved in the project processes, particularly those relating to land, displacement and benefits. Such participation should be in accordance with the policies of the AIIB, with their rights guaranteed by the Constitution of Nepal[66], as well as the international human rights obligations of Nepal[67].

Technical Assistance as enabler of projects

Another problem that has been observed in the last years in the hydropower sector – as well as in other sectors' development projects – is the trend of the Government of Nepal to request Technical Assistance (TA) loans from multilateral development banks (MDBs), that could act as catalysts for non-sustainable policies. In other words, the Government of Nepal has used the Technical Assistance loans from MDBs as a guarantee of the legitimacy of its activities – a purpose they are not supposed to serve. This was the case for the Fast-Track Kathmandu-Terai Expressway, an intensely debated project that has been opposed by the local Newar communities of Kokhana and Bungamati in the south of Kathmandu for years now.[68] The Asian Development Bank (ADB) had granted a Technical Assistance loan in September 2006 to carry out preparatory studies for the construction of the Expressway.[69] **The same could be the case with the Tamakoshi V Hydroelectric Project if the AIIB does not ensure that the Project preparation being undertaken through its grant will lead to the Project being accountable to the aspirations of the affected communities.** Otherwise, the grant will give the AIIB a bad reputation if it will have to exit the Project that

66 Specifically, Constitution of Nepal (2015, rev. 2016), Part 4, Article 51(f)(3): "Increasing the participation of local people in development process"

67 Specifically, the Indigenous and Tribal Peoples Convention (No. 169) of the International Labour Organisation (ILO) and the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) in relation to the indigenous peoples

68 See Indigenous Newar communities in Khokana and Bungamati call for follow-up actions from UN experts in Geneva to protect their rights threatened by the construction of Fast Track Expressway and other infrastructure projects (July 10, 2022), CEMSOJ.

69 Nepal: North-South Fast Track Road Project (nr. 40011-012), Asian Development Bank.

On the way to the Tamakoshi dam the landscape is rich of biodiversity; © Nora Sausmikat

it financed to develop but is implemented without respect to its environmental and social safeguards.

Cumulative environmental harm

Further, the Project is part of a **cascade scheme** with the larger Upper Tamakoshi Hydroelectric Project (UTKHEP), among other projects within the scheme. It is located within the Gaurishankar Conservation Area – an area of "outstanding biodiversity that also serves as a biological corridor connecting two crucial protected areas of the country, Sagarmatha National Park and Langtang National Park".[70] **As noted in the Feasibility Study of the Project and the AIIB's Project Summary Information, there will be significant cumulative impacts of the Project together with the UTKHEP, resulting in complete conversion of the Tamakoshi aquatic ecosystem into modified habitat", due to the intensive hydropower development on the Tamakoshi river basin.[71] Thus, the Project implementer and the concerned authorities and stakeholders, including the AIIB, should set a precedent for such cascade scheme undertakings, which are increasingly being carried out or planned in Nepal, by conducting a cumulative impact assessment for the Tamakoshi cascade dams scheme.**

NDCs under the Paris Agreement

The Government of Nepal is aggressively pushing the hydropower development to meet its Nationally Determined Contribution (NDC) under the Paris agreement of 2015. Nepal's second NDC shows a remarkable will of the Government to fight the effects of climate change, as it aims to develop renewable energy sources – mainly micro-, pico-, and large-scale hydropower – to produce 15000 MW by 2030 (in 2020, the country produced 1400 MW from renewable energy sources).[72] As noted in the NDC strategy of Nepal, the Government, including the NEA and its companies, should strongly consider the elements of "communication and coordination" and "equity and inclusiveness" when working to meet the country's NDC, including through hydropower development.[73] **The meaningful participation of indigenous peoples and other local communities in the Tamakoshi V Hydroelectric Project and other hydropower development in line with their Free, Prior and Informed Consent (FPIC) will ensure a good practice for the Project – not only for the affected people but also for wider environment with them being their custodians since ages.**

Debt and doubts for economic feasability

In its aggressive push for hydropower development and other infrastructure construction with the aim of economic prosperity, th Government of Nepal also needs to assess its debt situation towards fiscal and financial stability of the country. The Government's white paper on the energy, water resources and irrigation sector aims to increase production capacity to 15,000MW hydropower. It is clear that even under the high economic growth scenario Nepal will

70 Gaurishankar Conservation Area Project (GCAP), National trust for Nature Conservation, Government of Nepal.
71 Project Summary Information (PSI) – Project number 000261, Section IV, AIIB.
72 Second Nationally Determined Contribution (December 8, 2020), Table 1, Point (b), pp. 3-4.
73 Ibid, Section 5, pp. 20-21.

not be able to consume that in the next decade. India's low cost renewables are making the Nepal's hydropower less attractive in the region.[74] The selling of energy from nepal to India will most probably not pay off its investment.

It should be noted that the Nepalese debt has more than tripled in the last eight years, and although "experts [...] say the country still has room for borrowing", they also advise a "productive use of the borrowed funds".[75] Other countries have also experienced high indebtment in the past, but with good management of the loans, they could rapidly develop and decrease their dependency on foreign loans. In Nepal, even the so-called "national pride projects" have faced numerous delays and the consequent increases in costs.[76] The Government should thus be aware about the risks of an over-indebtment so as to avoid future troubles. The case of Sri Lanka shoud be an example for Nepal in this regard.[77] **Hence, publicly accessible examination is needed to dissect the AIIB loan, if that still goes ahead, or other public debt for the Tamakoshi V Hydroelectric Projects vis-à-vis its return on investment, including benefits to the affected communities and the environment.**

→ In view of the concluding issues, the main point to be considered is if there is a real need for construction of another hydropower plant on the Tamakoshi river basin, particularly with further debt while the return of such investment is not certain yet, or if it would be better to request loans for other more urgent needs of the country.

The Tamakoshi V Hydroelectric Project should thus undergo serious reassessment on all the presented grounds until which the Project should be put on hold.

74 The Third Pole, Who will buy Nepal's hydropower? 2019.
75 Prithvi Man Shrestha, Nepal's debt nearly triples in the last five and half years (March 2, 2021), The Kathmandu Post.
76 Ibid.
77 See Prithvi Man Shrestha, Loans on commercial terms could greatly increase Nepal's debt burden (March 29, 2022), The Kathmandu Post.

Abbreviations

ADB	Asian Development Bank
AIIB	Asian Infrastructure Investment Bank
BAP	Biodiversity Action Plan
CEMSOJ	Community Empowerment and Social Justice Network
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EIA	Environmental impact Assessment
EPF	Employees Provident Fund
ESMP	Environmental and Social Management Plan
ESS	Energy Sector Strategy/Environmental and Social Standards
FPIC	Free, Prior, and Informed Consent
FPICon	Free, Prior and Informed Consultation
GCA	Gaurishankar Conservation Area
LALRP	Land Acquisition and Livelihood Restoration Plan
LNG	Liquefied Natural Gas
MDB	Multilateral Development Banks
MW	Megawatt
NDC	Nationally Determined Contribution
NEA	Nepal Electricity Authority
NPR	Nepalese Rupee
OPIC	Overseas Private Investment Corporation
PSF	Project Preparation Special Fund
PTE	Panel of Technical Expert
SESD	Supplemental Environmental and Social Documentation
TA	Technical Assistance
TKJVC	Tamakoshi Jalvidhyut Company Ltd.
TOR	Terms of Reference
UTKHEP	Upper Tamakoshi Hydroelectric Project
VCDP	Vulnerable Communities Development Plan
WB	World Bank

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