

शुभ दीपावली



CHAPTER 2:

ADMINISTRATIVE AND REGULATORY FRAMEWORK

Chapter 2 provides an overview of the administrative framework for water resources management and sustainable hydropower development; regulations, policies, and standards that have informed the Cumulative Impact Assessment and Management: Hydropower Development in the Trishuli River Basin, Nepal; and insights from other basin-level initiatives in Nepal to guide the eventual implementation of emerging recommendations.

Administrative Framework

The Constitution of Nepal (2015) incorporates environmentally friendly governance with sustainable social and economic development as its vision (Ministry

of Forests and Soil Conservation 2015) and has accorded a high priority to protecting, promoting, and using water resources effectively. As a part of the new provisions, the constitution mandates the federal government to conserve water resources and to develop policy and standards for multiple water uses and the provincial governments to manage water resources within their jurisdiction. Drinking water and watershed management are under the jurisdiction of local government. However, water resource management is also under the concurrent rights of the state, province, and local governments. Figure 2.1 illustrates the administrative framework for the TRB with respect to legislative matters on water sources with relevance to sustainable hydropower development.

Figure 2.1 Administrative Framework

Federal structure for any central-level legislation on hydropower development in Nepal

- The Nepal Electricity Authority (NEA), Department of Electricity Development (DoED), Ministry of Forests and Environment (MoFE), and the Ministry of Land Revenue and Land Survey are the relevant decision makers. The Water and Energy Commission Secretariat (WECS) and Investment Board Nepal (IBN) are key advisory bodies.
- Federal matters include international boundary river issues, preservation of water resources, big hydroelectricity and irrigation projects, environmental management, national forests within provinces, water use, environment management, national parks and reserves, wetlands, forest policy, land use policies, and tourism development.

Provincial

- The Trishuli River Basin falls under provinces 3 and 4. The most recent governments at that provincial level took office in January-February 2018.
- Provincial matters include provincial roads, land management records, mining, research and management, national forests within provinces, water use, and environmental management.

Local

- The Trishuli Basin covers five districts: Rasuwa, Nuwakot, Dhading, Chitwan, and Gorkha. District Coordination Committees (DCCs) are responsible for implementation of the plans and activities as directed by the provincial administration.
- The DCCs oversee a total of 14 rural and urban municipalities that are in the Trishuli River catchment. Each of these municipalities has a specific advisory committee.
- Local matters are watershed, wildlife, mining protection, small hydro projects, alternative energy, and environmental issues.

Matters on such services such (i) electricity, water-supply, and irrigation; (ii) service fees, charges, penalties, and royalties from natural resources; (iii) forests, wildlife, birds, water uses, environment, ecology, and biodiversity; and (iv) royalties from natural resources are within the concurrent responsibilities at different levels.

An enabling policy environment for sustainable hydropower development is imminent in view of the following initiatives:

River Basin Plans

The WECS is mandated to implement river basin plans for sustainable management of basin resources according to the agreed management plans that ensure conservation of natural resources under the National Water Resources Strategy and National Water Plan. The WECS is in the process of commissioning a study to formulate river basin plans for all the nine major river basins in Nepal (including Gandaki River Basin, of which Trishuli is a part), and will subsequently prepare a hydropower development master plan for Nepal based on these river basin plans.

In the interim, the Department of Irrigation has commissioned a study to prepare an irrigation master plan for Nepal that will complement the river basin plans prepared under the WECS. Hence, there is an opportunity for the MoFE to propose an ecosystem approach to river basin planning and water allocation.

The World Bank has also commissioned studies to undertake a CIA in the Tamor Basin, in eastern Nepal, due to its financing of the 32 MW Kabeli A project located in the midstream section of the basin.

Revised EIA Guidelines

The government of Nepal enacted the Environment Protection Act (EPA) and the Environment Protection Rules (EPR) in 1997, making the integration of Initial Environment Examinations (IEEs) and Environmental Impact Assessments (EIAs) legally binding. EIAs need to be undertaken for projects with a capacity higher than 50 megawatts; that are located in national parks, wildlife reserves, or conservation areas; that result in the displacement of more than 100 households or the loss of a single tract of forest of more than

five hectares; and/or that have multiple purposes. Hydropower projects below these thresholds require an IEE to determine the need for undertaking a detailed and comprehensive EIA (Ministry of Forests and Environment 2018).

A review of available literature (Bhatt and Khanal 2010; Khadka and Tuladhar 2012; Singh 2007; and Ministry of Environment, Science, and Technology 2006) highlights the following observations on the EIA approval process as well as the effectiveness of the existing guidelines in identifying and mitigating impacts of hydropower development:

- There is a mismatch between the survey license boundaries and the study area in that a survey license may apply to a more confined geographical area than the study area required to be covered by a CIA. There is lack of specific guidance to define the spatial boundaries for the delineation of area of impacts of the project.
- The guidelines and policies do not specify precise methods and approaches to be adopted for cumulative impacts management, ecological flow determination, watershed management, and general livelihood restoration of local communities.
- The EIA reports tend to focus on only perceived significant impacts typical of the hydropower sector, without contextualizing to the location and the socioeconomic, physical, and river-basin context.
- There is a reported lack of coordination among the related sectors and ministries, which results in delays in the approval of the projects and the implementation and monitoring of the management plans, especially in larger projects such as hydropower projects.

The existing guidelines and manuals for EIAs were revised. The General EIA Guidelines 2017 and the Hydropower Environmental Impact Assessment Manual (Ministry of Forests and Environment 2018) will function as a guidance and reference for developers with respect to the following:

- To allow project developers to mitigate environmental and social (E&S) risks and impacts,

identify unforeseen risks and impacts, and manage E&S performance through the life of a project

- To improve financial and operational performance of projects by optimizing the management of inputs such as water and energy, and minimizing emissions, effluents, and waste, leading to a more efficient and cost-effective operation
- To identify ways to maximize local development benefits and greater acceptance of the project by stakeholders

Local Governance

Communities in Nepal have a tradition of strong local institutions for managing social affairs and resources. Associations such as the Community Forest User Groups (CFUGs), erstwhile Village Development Committees, and *Amma Samooha* or “mothers’ groups” have an established governance mechanism for managing resources such as forests, pasturelands, irrigation systems, and community assets.

Subsequent to the decentralization, in March 2017 a total of 744 local governance units were established, which include four metropolitan cities and 13 sub-metropolitan cities, 246 urban municipalities or *nagarpalika*, and 481 village municipalities or *gaonpalikas*. These local governance units (LGUs) co-exist with traditional and formal institutions such as the CFUGs to implement legislative matters within their jurisdiction on watershed, wildlife, mining protection, small hydro projects, alternative energy, and issues of environment.

Each LGU has an established administrative structure that includes departments such as social justice, environment development, and economic affairs. The implementation of the Trishuli Basin Co-Management Platform will require integration with the agenda and development plan that have been determined by the LGUs in accordance to the Environment-Friendly Local Governance Framework (EFLGF) of 2013 (Box 2.1) and the Ministry of Federal Affairs and Local Development requirements.

ESRM Guidelines of the Nepal Rastra Bank

Nepal Rastra Bank launched the Environmental and Social Risk Management (ESRM) Guidelines (Nepal Rastra Bank 2018) for banks and financial institutions, effective for all lending activities from June 1, 2018. The guidelines focus on environmental, social, and climatic risks, which banks and financial institutions need to assess for corporate loans, project finance, and general lending activities (based on certain exposure thresholds).

In view of Nepal’s hydropower potential and the projected growth in lending to this sector, the guidelines outline specific safeguard requirements that hydropower developers are to incorporate within their project over and above legal requirements. The scope of the bank’s E&S due diligence and decision to fund a hydropower project will be contingent on the control measures for E&S factors that a developer commits to establishing.

These E&S factors include watershed management, habitat conversion, water quality, effects on aquatic populations, reservoir management, pollution prevention and control, health and safety during construction and operation, and emergency preparedness and response (for example, in case of a dam failure or flooding). Proposed and under-construction hydropower projects within the TRB must comply with the covenants imposed by lending agencies as an outcome of implementing the ESRM guidelines.

Proposed Chitwan Annapurna Landscape (CHAL) Strategy

The CHAL strategy issued in 2016 (Ministry of Forests and Soil Conservation 2015) recognizes that reversing the impacts of large hydropower projects within the river basins that make up the Chitwan Annapurna Landscape (including Trishuli) is not feasible and has recommended the following measures for new hydropower projects:

- Project planning in the Gandaki River Basin should follow the Integrated Water Resources Management principles at river basin and sub-basin levels, as have already been adopted and emphasized by

Box 2.1 The Environment-Friendly Local Governance Framework (2013)

On October 9, 2013, the government of Nepal endorsed a new EFLGF to enhance the adaptive capacities of local communities to cope with the impacts of climate change. The EFLGF proposes areas of intervention and indicators of development to declare local administrative and governance units as “environmentally friendly.” In 2016, the Ministry of Federal Affairs and Local Development implemented the framework in 14 districts and 54 municipalities under the local governance initiative.

The United National Development Programme (UNDP) has been supporting the EFLGF initiative by compiling and documenting good practice in order to enhance knowledge of local bodies for identification of development activities that are climate-change resilient and that contribute to livelihood improvement. Some of the key intervention areas that can be aligned for localized impact management of hydropower projects include the following:

- Management of a joint sanitary landfill site for solid and household waste (especially relevant for urban municipalities such as Bidur)
- Developing a localized inventory of spring sources within the municipality and developing a protection plan
- Investment in river cut areas for erosion protection
- Construction of nurseries in open, barren, government land

Among the initiatives identified as good practices by the UNDP, communities within the Gorkha and Chitwan Districts of the TRB have been recognized for initiatives of spring conservation and creation of community-managed ponds, which enhance tourism values and provide reliable drinking water supply.

Source: Ministry of Federal Affairs and Local Development 2015.

the government of Nepal in its Water Resources Strategy (2002) and National Water Plan (2005).

- Plans to develop water resource use and extraction should ensure that sufficient water is released downstream to maintain necessary environmental flows to sustain ecosystem functions and services in the CHAL.

Compendium of Applicable Regulations

Appendix C provides a compendium of the major policies, regulations, guidelines, and acts of Nepal that have a direct bearing on hydropower development. The CIA has also referred to the following international standards and guidance on sustainable hydropower development:

- World Bank Group *Good Practice Handbook: Environmental Flows for Hydropower Projects, Guidance for the Private Sector in Emerging Markets*, February 2018
- IFC *Good Practice Handbook on Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets*, August 2013
- IFC *Good Practice Note on Environmental, Health, and Safety Approaches to Hydropower Projects*, March 2018
- International Hydropower Association, “Hydropower Sustainability Assessment Protocol,” updated July 2018

Some of the key regulations that directly inform basin-level sustainable hydropower development and have been considered for the CIA of TRB are presented in Table 2.1.

Table 2.1 Key Applicable Acts, Regulations, and International Standards

Regulatory citation	Key requirements	Relevance for Trishuli River Basin and coverage in the CIA
Regulations		
Environment Protection Act (1997)	<ul style="list-style-type: none"> • Article 3 mandates IEE/EIA study for development projects. • Article 4 prohibits implementation of projects without approval. • Articles 5 and 6 describe the approval procedures. • Article 7 prohibits emission of pollutants beyond the prescribed standards. • Articles 9 and 10 stipulate provisions for the protection of natural heritage and environmental protection area. • Article 17 stipulates compensation provisions arising from the discharge of waste and pollution. • Article 18 includes provision of punishment for actions against the act and rules, guidelines, and standards formulated under the act. • Article 19 stipulates the rights to appeal to the concerned appellate court against the decision of concerned authority. 	The requirements for conducting IEE/EIA of hydropower projects, approval processes, and other associated requirements are provided.
Soil and Watershed Conservation Act (1982)	<ul style="list-style-type: none"> • Article 10 prohibits actions within any protected watershed area declared pursuant to article 3 of this act. • Article 24 stipulates there are no obstacles for the government of Nepal to use to develop water resources. 	Presents protected watershed and their conservation requirements.
Aquatic Animal Protection Act (1960) with amendments in 1998	<ul style="list-style-type: none"> • Section 5 (5B) presents provisions of fish passes and fish hatchery while constructing water diversion structures and requirement of prior permission from the government. 	Enforces the requirement for protection of aquatic species in a particular river, permission requirements, minimal downstream flow requirements, and ban on certain activities like killing of fish by chemical or current.
National Foundation for Upliftment of Adivasi/Janjati Act, 2058 BS (2002)	<ul style="list-style-type: none"> • The act prescribes a number of provisions to overall improve the lot of the Adivasi/Janajati by formulating and implementing programs relating to the social, educational, economic, and cultural development. This is done through creating an environment for social inclusion of disadvantaged and indigenous people and ensuring participation of disadvantaged groups in the mainstream of overall national development of the country, by designing and implementing special programs for disadvantaged groups. 	Ensures rights of Adivasi/Janjati groups.

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Regulatory citation	Key requirements	Relevance for Trishuli River Basin and coverage in the CIA
Regulations (continued)		
Local Government Operation Act (2017)	<p>This act states the roles of local bodies in Nepal. The jurisdiction, roles, and responsibilities of personnel appointed in local bodies are clearly mentioned.</p> <ul style="list-style-type: none"> • Section 2 (k): Regulation of authorized development works, encroachment of public property related to rights of Municipality and village committee • Section 11 (d) (2): Tax on local infrastructures • Section 11 (g) (1): Enactment of laws and policies related to local development • Section 11 (g) (2): Regulation of projects related to economic, social, environmental, and technical aspects • Section 11 (u): Management related to water resources, wildlife, mines, and minerals • Section 11 (4), (12) (c) (d): Related to work, responsibility, and right of municipality, village committee, and ward committee 	Presents the jurisdiction, roles, and responsibilities of local bodies toward a project and a project's reporting and other responsibilities to a local body.
Water Resources Act (1992)	<ul style="list-style-type: none"> • Article 3 stipulates the water resource rights of government. • Article 4 prohibits use of water resources without obtaining a license, except for specified uses under the Act. • Article 7 establishes the order of priority for the utilization of water resources. • Article 8 stipulates procedures for water resource licensing. • Article 16 empowers government to utilize the water resources and acquisition of other lands and property for the development of water resource as stipulated in the act. • Article 18 stipulates the right of the government to fix the quality standards of water. • Article 19 prohibits pollution of water resources above prescribed pollution tolerance limits. • Article 20 prohibits causing harm and adverse effects on the environment while developing a water resource project. 	Presents requirements for obtaining a license for project development and establishes priority for different water development schemes (for example, drinking water, irrigation, and hydropower).
Forest Act 2049 BS (1993) with amendments to 2055 BS and 2073 BS	<ul style="list-style-type: none"> • Article 17 includes provision of lease and permit from the government to establish rights on the facilities on the national forest. • Article 18 prohibits transfer of facilities or any other rights on the national forest to the others. • Article 22 establishes government rights on the forest products of the national forest. • Article 25 empowers government to hand over a National Forest as Community Forest for communities to develop, conserve, use, and manage, including selling and distributing the forest products independently by fixing their prices according to a work plan. • Article 31 empowers the government of Nepal to grant any part of a National Forest in the form of Leasehold Forest for the purpose of forest conservation. 	Pertains to project requirements associated with forest-related tasks, including for government- and community-owned forests.

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Regulatory citation	Key requirements	Relevance for Trishuli River Basin and coverage in the CIA
Regulations (continued)		
Forest Act 2049 BS (1993) with amendments to 2055 BS and 2073 BS (<i>continued</i>)	<ul style="list-style-type: none"> • Article 49 prohibits any actions causing harm to the forest other than specified in the act and rules under the act. • Article 67 stipulates land rights of the government on the Community Forest, Leasehold Forest, and Religious Forest. 	
Guidelines, Plans, and Policies		
Hydropower Development Policy (2001)	<p>Section 5</p> <ul style="list-style-type: none"> • Subsection 5.7: Environmental protection • Subsection 5.8: Mitigation planning of the affected resources • Subsection 5.20: Opportunity for local people in employment <p>Section 6</p> <ul style="list-style-type: none"> • Subsection 6.1: Environmental release, assistance in the land and property acquisition, responsibility for resettlement, and rehabilitation of project-affected people • Subsection 6.5: Provisions of hydroelectric project transfer to government of Nepal • Subsection 6.12: Royalty payments to local area, licensing provisions for survey and generation, terms of license • Subsection 6.13: fee provisions 	<p>Presents licensing provisions for hydropower survey and generation, royalty payments to local areas, requirements for environmental and social studies, responsibilities for land acquisition and resettlement, minimum downstream release, and other considerations.</p> <p>Under this policy, certain projects must execute a specific Project Development Agreement, which sets forth commitments on E&S aspects over and above regulatory requirements.</p>
Land Acquisition, Resettlement and Rehabilitation Policy for Infrastructure Development Projects (2015)	<ul style="list-style-type: none"> • Recognizes the need for a resettlement and rehabilitation plan to ensure that the livelihoods of project-affected persons or households be at least above the pre-project conditions • Emphasizes that the project development agency conducts meaningful consultation with project-affected persons, communities, and sensitive groups, particularly poor, landless, senior citizens, women, children, indigenous/Janajati groups, disabled, helpless, and persons having no legal rights on the operated land while preparing land acquisition, resettlement, and rehabilitation plan • Requires completion of compensation, resettlement, rehabilitation, and other benefits to the project-affected persons/ households prior to the physical and economic displacement by the project • Requires that the land-acquisition process, as far as possible, be undertaken through negotiation with project-affected persons/ households in a way that is transparent, free, fair, and justifiable 	<p>It is understood that projects under planning will be required to adhere to the policy. This can help standardize procedures for land acquisition, different compensation packages, and rehabilitation commitments and provide a framework for considering the rights of non-titleholders.</p>

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Regulatory citation	Key requirements	Relevance for Trishuli River Basin and coverage in the CIA
Guidelines, Plans, and Policies (continued)		
Land Acquisition, Resettlement and Rehabilitation Policy for Infrastructure Development Projects (2015) (continued)	<ul style="list-style-type: none"> • Requires that land based compensation and resettlement be provided to persons/households who lose all of their property or whose livelihood is agriculture based • Requires inclusive programs for the enhancement of socioeconomic development of disadvantaged groups, such as marginalized groups that lack access to resources (for example, Dalit, indigenous or Janajati groups, single women) • Requires that compensation be paid for built properties, including resettlement and rehabilitation benefits for persons/households who do not have land or legal rights to the currently operated land • Requires project development agency to ensure the allocation of resources required for resettlement/rehabilitation and livelihood restoration of the project-affected persons/households 	
Climate Change Policy (2011)	<p>Includes:</p> <ul style="list-style-type: none"> • Climate adaptation and disaster risk reduction • Low carbon development and climate resilience • Access to financial resources and utilization • Capacity building, peoples' participation and empowerment • Study, research, technology transfer, climate-friendly natural resources management, and institutional set up with legal provisions • Importance of monitoring and evaluation 	Identifies greenhouse gasses, climate change, and other disaster-related issues and mitigations with alignment to the United Nations Framework Convention on Climate Change (1992), to which Nepal is a signatory.
National EIA Guidelines (2017), MoFE	<ul style="list-style-type: none"> • Generic information on the procedures for EIA Scoping, terms-of-reference preparation, baseline environmental studies, information disclosure, public consultation, prediction and evaluation of impacts, mitigation prescriptions, monitoring, and EIA report preparation in line with the EPA and the EPR. 	Presents guidelines for preparation of EIA reports, which have recommendations to improve and streamline data collection and impact assessments.
Hydropower Environmental Impact Assessment Manual (2018), MoFE	<ul style="list-style-type: none"> • The EIA manual enforces a comprehensive EIA adhering to the spirit of the Environment Protection Act and associated Environment Protection Rules, National EIA guidelines, and international good practices for sustainable hydropower development. This manual has been developed within the framework of existing policies, acts, and regulations of the government of Nepal, is to be used as a reference document, and will not supersede prevailing laws. 	Presents guidelines for preparation of hydropower EIA reports, which have recommendations to improve and streamline data collection toward mitigation of significant impacts.

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Regulatory citation	Key requirements	Relevance for Trishuli River Basin and coverage in the CIA
Guidelines, Plans, and Policies (continued)		
Guidelines on Land Use of Forest Area for other Purposes (2006)	<ul style="list-style-type: none"> The guidelines address conditions required to make forest lands available to development projects and required compensatory measures for the loss of forest land use and forest products. 	Provides guidelines for use of forest land and compensatory forestation requirements.
Guideline for Physical Infrastructure Development and Operation in Protected Areas (2008)	<ul style="list-style-type: none"> Sets guidelines for infrastructure development in protected areas. 	Presents project requirements for infrastructure development.
Water Resources Strategy Nepal (2002) and National Water Plan Nepal (2005)	<ul style="list-style-type: none"> Section 4: Social development principles and environmental sustainability principles Section 5: Strategic output 2 (Sustainable Management of Watersheds and Aquatic Ecosystems) and strategic output 5 (Cost-Effective and Sustainable Hydropower Development) 	The Water Resources Strategy is being revised into a National Water Plan that is presently in draft stage. This may have relevant frameworks that would guide the formation and implementation of the Trishuli Basin Co-Management Platform.
International Standards		
Good Practice Handbook (GPH) on Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets (IFC 2013)	<ul style="list-style-type: none"> This GPH emphasizes that governments are responsible for preparing CIA frameworks to assist the private sector in the identification and management of cumulative impacts. But because such frameworks rarely exist, the private sector has an interest in considering not only its own contribution to cumulative impacts but also other projects and external factors that may affect similar VECs. 	The methodology for the CIA of the TRB has been developed based on the six-step approach recommended by IFC's Good Practice Handbook. The IFC is funding the CIA of the TRB in view of its interest in projects upstream and downstream of UT-1 (in which it is an equity investor) and has thus benchmarked the study as an initiative for the regulators, hydropower developers, the affected communities, and other stakeholders to coordinate efforts to manage cumulative impacts at the watershed level.

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Regulatory citation	Key requirements	Relevance for Trishuli River Basin and coverage in the CIA
International Standards (continued)		
Good Practice Note (GPN) on EHS Approaches for Hydropower Projects (IFC 2018b)	<p>The GPN provides suggestions on EHS impact management for run-of-river diversion, run-of-river reservoir, storage reservoir, and pumped storage types of facilities. The GPN requires cumulative impacts assessment and management to do the following:</p> <ul style="list-style-type: none"> • Assess cumulative effects of cascading projects located in the same river system • Assess effects of other projects over a larger watershed or regional area that may cross jurisdictional boundaries • Include effects due to natural perturbations affecting environmental components and human actions • Assess effects during a longer period of time into the past and future • Consider effects on VECs resulting from interactions with other actions, and not just the effects of the single action under review • Include other past, existing, and future (for example, reasonably foreseeable) projects • Evaluate significance of effects that are beyond local, direct effects 	The CIA has considered specific management and performance monitoring indicators on aspects such as community health and safety for inclusion in an impact management framework for individual hydropower developers to mitigate localized impacts of their projects.
Good Practice Handbook (GPH) on Environmental Flows for Hydropower Projects (IFC 2018a)	This GPH provides guidance to practitioners on taking rigorous and consistent approaches to assess and manage hydropower project impacts on downstream river ecosystems and people through the assessment and provision of environmental flows (EFlows).	The holistic EFlows model used for the CIA has considered the principles of the GPH for response curves linked to fish and aquatic habitat. The suggested mitigation and monitoring regime also considers the log frame approach recommended by the GPH.
Hydropower Sustainability Environmental, Social and Governance (ESG) Gap Analysis Tool (HESG Tool) (IHA 2018)	The ESG tool was developed by the International Hydropower Association between February 2017 and June 2018 under the mandate of the Hydropower Sustainability Assessment Council, with the support of the Swiss State Secretariat for Economic Affairs. It provides a framework for developers to assess their projects against specified criteria in order to evaluate gaps.	The ESG tool (July 2018) parameters have been considered for developing a monitoring protocol for use by the THDF.
Good Practice Handbook on Addressing Projects Impacts on Fishing-based Livelihoods (IFC 2015)	This handbook is intended to be a guide for projects whose development and operations impact fish resources and habitats, fisheries, and the fishing-based livelihoods.	The assessment of fishing as an activity within the livelihoods VEC has considered principles outlined in this GPH to evaluate significance and determine additional studies that may be needed.

Other Basin-Level Initiatives

For the TRB, integrated planning and management of cumulative impacts will require an entity that can bring together stakeholders relevant to water management, energy development, environmental and

social management, and local governance to discuss and agree on common goals for harnessing water and other resources in the basin in a sustainable manner.

Table 2.2 presents information and insights on three initiatives that have relevance for a basin-level management program for TRB.

Table 2.2 Insights from Basin Initiatives

Project	Overview	Key features	Key insights
The Koshi Basin Program	Australia Aid in partnership with the International Centre for Integrated Mountain Development and the International Water Management Institute are developing strategies to enhance ecosystem services and reduce poverty in the Koshi River Basin through a regionally coordinated water resources management plan.	<ul style="list-style-type: none"> Established the mutual dependency of upstream and downstream communities along the river basin for dry season water through the Water Evaluation and Planning System Used a watershed model to assess implications on the quantity and quality of water in the river basin to understand hydrological regime, water supply and demand scenarios, extreme events such as floods and droughts, and associated changes Watershed model included Soil and Water Assessment Tool to show spatial variation of precipitation, evapotranspiration, and available water within the basin 	<ul style="list-style-type: none"> Enhance the capacity of rural women, men, and local stakeholders in water management through access to information, knowledge, gender-friendly technologies, and improved water infrastructure. Encourage participation of women at decision-making levels. There is low representation of women among water-related groups despite increased burden on them to manage water for their households and for agriculture. Strengthen collective farming and riverbed farming. Recognize that people have limited access to adaptation options (especially women) and, therefore, water management options for livelihood improvement should be designed.

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Project	Overview	Key features	Key insights
Chitwan-Annapurna Landscape (CHAL), Nepal Strategy and Action Plan 2016–2025	<p>The plan aims to guide the future course of conservation and development interventions in the Gandaki River Basin. The vision of the CHAL Landscape Strategy is to manage resources through an integrated, river-basin planning approach built on the foundation of climate-smart conservation and sustainable development practices. This will promote persistence of biodiversity and sustainable management of natural resources for continued provision of ecosystem goods and services that support equitable and inclusive economic prosperity.</p>	<p>The CHAL plan is based on the following:</p> <ul style="list-style-type: none"> • A river-basin approach, since it best captures and mostly contains the critical ecosystem services and processes of the CHAL • Accountability of people having a stake in natural resource conservation and management • Economic prosperity through conservation of natural resources and sustainable development in the CHAL • In-situ conservation complemented by ex-situ conservation when the latter can contribute to sustainable harvesting or adaptation to climate change • Integrated, participatory, and adaptive management in order to integrate climate change and its inherent uncertainties, and address emerging issues • Synergy and harmonization between development and conservation plans • Strengthening multiple stakeholders' capacities through an iterative process of identifying capacities and weaknesses and providing opportunities to institutionalize • Respecting local decision making by recognizing and adopting appropriate local decisions that will enhance local communities' ownership 	<p>Key elements of the CHAL Landscape Strategy that have been proposed for the Gandaki River Basin and relevant for hydropower development, including the following :</p> <ul style="list-style-type: none"> • Promote integrated water use and management through river-basin and sub-basin plans that balance multiple uses of water, including hydropower generation for sustainable economic development and desired environmental flows and services. • Address the drivers of deforestation and forest degradation in the CHAL, in particular, the pressure from fuelwood demand, by promoting use of clean energy sources including hydropower. • Water conservation and hydrological flows to support and sustain life are one of the most important conservation and management targets of the CHAL. • Plans to develop water resource use and extraction should ensure that necessary water is released downstream to maintain necessary environmental flows to sustain ecosystem functions and services in the CHAL.
USAID PANI Project	<ul style="list-style-type: none"> • The Program Aquatic Natural Resources Improvement (PANI) is an initiative of USAID and links to the USAID Nepal Hydropower Development Project and complementary projects funded by the U.S. Forest Service and the International Water Management Institute. 	<ul style="list-style-type: none"> • A focus on watershed, basin, and national scales of water resources management • Targeted conservation of key aquatic species and user-adaptation in Karnali, Mahakali, and Rapti river basins • Contracted work to Development Alternatives International to test data-collection system to measure the health of local watersheds 	<ul style="list-style-type: none"> • Increase visibility of freshwater issues through policy engagement, academic research, curriculum development, and sponsorship of international forums. • Emphasize user-centered innovation and design to analyze water resource use by various stakeholders, including fishermen, government officials, and hydropower developers.

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Project	Overview	Key features	Key insights
USAID PANI Project <i>(continued)</i>	<ul style="list-style-type: none"> It focuses on community-based models to reduce threats to key species. It was implemented after the establishment of Nepal's new constitution and is an opportunity to align water governance to political structure. 	<ul style="list-style-type: none"> In partnership with Midwestern University, the plan is to conceive local watershed bodies as "learning laboratories" The PANI Project (USAID, in review) has developed an approach to river stretch co-management through the establishment of community river groups. These community river groups were legally mandated through a municipality-level legal instrument also facilitated by USAID in Chamunda Bindraseni Municipality (Assembly 2019). 	<ul style="list-style-type: none"> Find effective incentives for all stakeholders involved to improve engagement in water conservation and related management activities.