

Involuntary Resettlement in Hydro-power Project as a Part of Environmental Impact Assessment: A Case of Nepali Context

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Publication Date: 2026/07/16

Abstract: The Environmental Impact Assessment (EIA) is a mandatory tool for large infrastructure projects including hydropower projects in Nepal and it has designed to assess the environmental and social impacts of a project which is comprehensive, covering various scientific disciplines and concerns, including those related to involuntary resettlement. However, the application of EIA in Nepal, especially concerning involuntary resettlement, has been a subject of discussion and analysis.

The major objectives of this study are as follows: (I) An Overview of policies related on EIA and IR, (II) Find out the policy-gaps and (III) Provide the Valuable Way forwards for IR in Nepal.

➤ **Methods:**

Collect and review of several Acts, Rules and Regulations (Legal-Policy- Review). Similarly, Case Study and Comparatively Assessment as well as Empirical Assessment etc are the major methods for preparing the research Work.

Keywords: Impact Assessment (IA), Resettlement Action Plan (RAP), Hydropower, Land Acquisition Act (LAA), Involuntary Resettlement (IR).

How to Cite: Bhakti P. D. Timsina (2026) Involuntary Resettlement in Hydro-power Project as a Part of Environmental Impact Assessment: A Case of Nepali Context. *International Journal of Innovative Science and Research Technology*, 11(6), 3509-3514. <https://doi.org/10.38124/ijisrt/26jun1419>

I. BACKGROUND

In Nepal, the practice of EIA has grown from initial recognition in sixth periodic plan in 1980 to its formal implementation with the Environment Protection Act and Rules in 1997. Key milestones include the Sixth Five Year Plan (1980-1985) recognizing the need for EIA for major infrastructure projects, the Seventh Five Year Plan (1985-1990) incorporating environment management policies, and the establishment of a national EIA system in the Eighth Five Year Plan (1991-1995) and this has anticipated the establishment of a national system for EIA and stipulated that EIA be conducted at the stage of feasibility study. Similarly, National EIA Guideline was endorsed in September 1992 and gazette in July 1993. followed by the enforcement of Environment Protection Act and Environment Protection Regulation in 1997.

The initiative was brought so that environment protection can go hand in hand with development projects, making the development in the country more sustainable. The previous legislations of 1997 for the EIA was also replaced where, Environment Protection Act (2019) and Environment Protection Rules (2020) now define the types of projects that

need to carry out environmental assessments, which made the EIA process more detailed. EIA is a required tool for hydropower projects in Nepal and it has considered to assess the environmental and social impacts of a project which is comprehensive, covering various scientific disciplines and concerns, including those related to involuntary resettlement. The application of EIA is not uniform across all projects, potentially leading to variations in how land acquisition and compensation are handled.

Involuntary resettlement refers both to physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or means of livelihood) as a result of project-related land acquisition or restriction of access to natural resources. Resettlement is considered involuntary when affected individuals or communities do not have the right to refuse land acquisition that results in displacement. This occurs in cases of: (i) lawful expropriation or restrictions on land use based on eminent domain; and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail.

In Nepal, involuntary resettlement, is a key concern in development projects, particularly hydropower projects. EIA is a required process for these projects, and has been designed to address social and environmental impacts, including involuntary resettlement. However, the application of EIA in Nepal, especially concerning involuntary resettlement, has been a subject of discussion and scrutiny.

II. POLICY FRAMEWORK

Nepal has a Resettlement Policy Framework (RPF) that provides guidance for land acquisition and resettlement in development projects such as the Land Acquisition Act (1977) enables the government to acquire land for public purposes, providing for fair and just compensation. Similarly, the Land Reform Act (1964) also plays a role in establishing the rights of tillers and tenants over the land. The Land Acquisition Act (1977), Land Acquisition, Resettlement and Rehabilitation Policy (2015), Land Use Policy (2018), National Forest Policy (2018), Local Government Operation Act (2017), Electricity Act (1992), Electricity Regulation (1993), Forest Act 2019, are supporting rules and regulations to acquire the land for public purpose.

The Environment Protection Act, (2019) and its required provision of Environmental Assessments (EAs) prior to the construction of any type of projects. Environment Protection Rules (2020) has enlisted all the types of projects requiring Brief Environmental Study (BES) under Schedule-1, Initial Environmental Examination (IEE) under Schedule-2 and all types of projects requiring Environmental Impact Assessment (EIA) under Schedule-3. Environmental Assessments for hydro power sectors are enlisted in Schedule-3-Chha.

III. THE EIA PROCESS IN NEPAL

The EIA process in Nepal is ruled by the Environment Protection Act, 2019 and the Environment Protection Rules, 2020, along with the National EIA Guidelines, 1993.

➤ *Process:*

• *Screening:*

Projects are screened to determine if an EIA is required.

• *Scoping and Terms of Reference (ToR):*

A document outlining the scope and methodology of the EIA study is prepared.

• *EIA Report:*

A detailed report is prepared, including environmental impact assessment, mitigation measures, with an Environmental Management Plan (EMP).

➤ *Stakeholder Involvement:*

Transparency and stakeholder involvement are emphasized throughout the EIA process.

➤ *Review and Approval:*

The EIA report is reviewed and approved by the Ministry of Forest and Environment (MoFE) through the Department of Electricity Development (DoED) under Ministry of Energy, Water Resources and Irrigation (MoEWI).

IV. INVOLUNTARY RESETTLEMENT AND ITS PROCESS

The term "resettlement" in a more limited sense refers specifically to displacement. In Nepal, involuntary resettlement incorporates the overall process of land acquisition, physical displacement, and economic rehabilitation of affected individuals or communities. It has broader than just physical relocation and includes ensuring that displaced individuals' livelihoods and living standards are restored or improved. The mechanism and steps for preparing the Involuntary Resettlement in Nepal are summarized as follows:

➤ *Legal Framework:*

The Land Acquisition Rehabilitation and Resettlement Policy (2015) guides land acquisition and resettlement for infrastructure projects.

➤ *Risk Assessment:*

Projects are categorized as high, medium, or low-risk based on the number of households displaced.

➤ *Social Impact Assessment (SIA):*

The policy requires an SIA to assess the social and economic impacts of projects, particularly on displaced populations.

➤ *Resettlement Action Plan (RAP):*

A RAP is developed for projects that cause involuntary resettlement, outlining the process for compensation, relocation, and livelihood restoration of affected communities.

➤ *Stakeholder Consultation:*

Consultations with affected households are crucial for ensuring their needs are addressed.

➤ *Grievance Redress Mechanism:*

Mechanisms are in place to address grievances related to resettlement.

➤ *Monitoring and Reporting:*

Progress of RAP implementation is monitored and reported regularly.

➤ *The Objectives of Involuntary Resettlement should have*

- To avoid or, at least minimize involuntary resettlement wherever feasible;
- To mitigate adverse social and economic impacts from land acquisition or restrictions on affected persons use of and access to land;

- To improve or, at a minimum, restore the livelihoods and standards of living of displaced persons to pre-project levels, through measures;
- to improve living conditions among displaced persons through provision of adequate housing with security of tenure at resettlement sites.

V. INVOLUNTARY RESETTLEMENT PRACTICES IN NEPAL

Nepal's history of resettlement policy started with the establishment of Rapti Development Board in 1956. Supported by US assistance, it was meant to resettle flood victims of 1955 in Chitwan Valley by bringing forest land under cultivation. In 1963, Nepal Resettlement Company was established under the Ministry of Food and Agriculture. The company executed resettlement programs in the Tarai districts of Banke, Nawalparasi and Jhapa. Although many legal frameworks relating to resettlement exists in Nepal, the LAA (1977) is the only legal document dealing with land acquisition and compensation. Yet, it does not address many relevant and apparent issues, which have adverse socio-economic impacts on families affected by development projects.

The resettlement and rehabilitation of project affected people are not envisaged in the LAA -1977. On the other hand, donor guidelines-on a project specific basis-have been adopted to address social safeguard measures as per their involuntary resettlement policies. Donor policies-based resettlement practices applied in some projects in Nepal are briefly described below. While the projects listed below are not exhaustive and focuses primarily on the donor-driven projects, they do help to provide a general picture of resettlement practices in Nepal over the last 30 years.

➤ *The Kali Gandaki Hydroelectric Project:*

The Kali Gandaki "A" Hydroelectric Project is a Peaking -run- off the river(P-RoR) type project with its installed capacity of 144 MW and generates 842 GWh of renewable energy annually. ADB guidelines on involuntary resettlement were followed in this project. Acquisition, Compensation, Resettlement and Rehabilitation (ACRP) was prepared to assist the PAFs accordingly. The physically displaced households of this project were 221.

➤ *Arun-III Access Road:*

The International Development Association (IDA-The World Bank Group) agreed funding for Arun-III Access Road Project and the agreement was signed in 1989. The Arun-III Access Road guidelines issued in 1989 by the Government of Nepal provided compensation package to PAFs. The package included cash for assets acquired or damaged due to the project and a rehabilitation grant based on family size to cover for suffering and hardship.

➤ *Tanahu Hydro-electric Project:*

The 140-MW Tanahu hydropower project located in the Tanahu district is being constructed under the Tanahu Hydro-

electric Company, a subsidiary company of Nepal Electricity Authority (NEA). The project is being co-funded by the Asian Development Bank (ADB), the Japan International Cooperation Agency (JICA) and European Investment Bank (EIB). ADB, JICA and EIB guidelines on involuntary resettlement are being followed in this project. The Resettlement and Indigenous Peoples Plan (RIPP) was prepared during the project appraisal along with the EIA. The displaced households for the project were 86 HHs.

In brief, Nepal does not have a comprehensive and inclusive national policy specific to resettlement issues in development projects. On the other hand, resettlement has been addressed on a project specific basis as per the guidelines of World Bank since late 1980s and ADB since the beginning of 1995.

VI. POTENTIALITY OF HYDROPOWER PROJECTS AND INVOLUNTARY RESETTLEMENT

Water resources are important natural resources for the economic development of Nepal. Availability of abundant water resources along with favorable geophysical features (specifically steep topography) provides immense opportunities for hydropower production in the country. In a study conducted in early sixties, the theoretical hydro potential of Nepal was calculated as 83,000 MW. Later, basin master plan studies revealed that out of the theoretical potential, 40,000 to 45,000 MW would be technologically economically feasible (DoED,2018).

Realizing the potential for hydro power development, the Government of Nepal (GoN) formulated the Water Resources Act (1992); Water Resources Regulation (1993); Electricity Act (1992); Electricity Regulation (1993) and Hydropower Development Policy (1992). Similarly, realizing the need for a government line agency to develop, promote and regulate the hydropower sector, GoN had established the Department of Electricity Development (former Electricity Development Centre) on 16 July 1993. Previously, GoN had established Nepal Electricity Authority (NEA) on 16 August 1985. Furthermore, in order to involve the private sector in hydropower development more efficiently and effectively, GoN developed Hydropower Development Policy (2001). Thereafter, GoN formulated Water Resources Strategy (2002) and National Water Plan (2005). With these policies and strategies, GoN has emphasized the need to increase private sector involvement in hydropower development.

The GoN aims to generate 28,500 MW of electricity, primarily through hydropower, by 2035. This ambitious target is part of a broader energy development roadmap and working guideline approved by the government. The plan also includes utilizing hydropower for domestic consumption and exporting excess electricity to neighboring countries (Republica,2025). The proposed large-scale hydro-generation projects and its involuntary resettlement are summarized as follows (Table-1):

Table 1 Proposed Hydropower Project and Involuntary Resettlement

S.N.	Name of Project	Capacity (MW)	Total Affected HHs	Involuntary Resettlement (HHs)	Remarks
1	Uttar Ganga Storage HEP	828	1479	962	RAP, 2024
2	Budhi Gandaki Storage HEP	1200	8117	3560	EIA,2017
3	West Seti Storage HEP	750	2125	1393	RAP,2008
4	Upper Arun HEP	1063	335	22	RAP,2023
5	Dudh Koshi Storage HEP	670	988	162	The Kathmandu Post, June 3,2025
6	Karnali Chisapani Multi-Purpose Project	10,800	54,600	11,400	Nepal News, 2025
	Total	15,311	67,644	17,541	

Table-1 shows the number of households likely to be displaced due to the proposed hydropower projects in Nepal (Based on the feasibility Study and may be increased during the construction). The increasing number of displaced households as indicated in the Table ranging from 22 to 11,400—can be resulted the scarcity of land for resettlement sites. Besides, the resettlement and rehabilitation of an increasing number of displaced households can also become an economic constraint for the project.

Moreover, the figure outlines that the generation of 15,311 MW hydro-projects will displace the 17,541 families and total population is estimated to be 76,653 (Base Year: 2025 with 4.37 HH size). To meet the GoN's target to generate the 28,500 MW by 2035, around 28,874 households or 126,179 populations shall be physically displaced due to the construction of hydropower projects.

In Nepal, both EIA and Involuntary Resettlement policies are governed by a framework of laws and regulations. EIA is mandated by the Environment Protection Act and Rules, while resettlement is guided by the Land Acquisition, Rehabilitation and Resettlement Policy. These policies aim to ensure sustainable development by minimizing environmental and social impacts of projects, especially those involving involuntary resettlement. But existing polices and laws cannot solve the aforementioned involuntary resettlement caused by hydropower projects. Hence, national level involuntary resettlement mechanism should be developed as soon as possible.

VII. POLICY GAP, ISSUES AND CHALLENGES

Involuntary resettlement for hydropower projects in Nepal is a complex issue, often involving displacement of communities and loss of assets. While the GoN and development agencies recognize the need for resettlement and rehabilitation, challenges remain in effectively implementing fair and sustainable resettlement plans. The government has a policy guiding resettlement, but it hasn't been fully implemented.

The resettlement and rehabilitation for hydropower projects involve several key steps, including conducting a detailed resettlement plan, compensating affected persons (APs), providing livelihood restoration, and ensuring social

safeguards. The LAA,1977 serves as the legal and policy frameworks for these processes. However, it does not address many relevant and apparent issues, which have adverse socio-economic impacts on families affected by development projects. The LAA 1977 is anachronous and this would probably explain its above-mentioned ineffectiveness since it was promulgated quite a few decades ago in 1977. Likewise, the following are some of the areas and issues that the LAA, 1977 overlooks: (i) it has no provisions for granting compensation to project affected people lacking ownership of land; (ii) it does not address hardship caused from delays in payment of compensation for several years after the completion of the project; (iii) the LAA, 1977 lacks in mechanisms to ensure ethnic minorities and vulnerable groups-Adivasis/Janjati, Dalits and women-use compensation money in a manner that would enable them to restore their living standards at least to levels prior to the project; and (iv) it does not analyze the limitation of land for land compensation.

The GoN approved a Policy on Land Acquisition, Resettlement and Rehabilitation for Infrastructure Development in March 2015, however its implementation is not mandatory. The policy outlines the need to conduct an economic and social impact assessment (SIA) and prepare a Resettlement Action Plan (RAP) of the development project, which was not a requirement under the LAA, 1977. Based on this assessment, projects are categorized as high, medium, and low-risk. The act also provisioned for the project affected families to be entitled to compensation if works like installation of transmission, telephone and underground drinking water pipe lines affect livelihood. Further in case the projects affecting yields of registered commercial crop, fruit or flower producers, compensation equivalent to five years of revenue must be given in cash but this policy has not fully practiced yet.

This policy is considered very important in terms of land acquisition for infrastructure projects. It seeks to correct the deficiencies in the LAA,1977. The Act is salient regarding the economic and social impact assessment. However, this policy mandates an Economic and Social Impact Assessment (SIA) for all development projects. This impact assessment plays an effective role in properly assessing and mitigating the potential consequences of land acquisition on affected communities.

Similarly, the policy recognizes that the implementation of projects will displace persons, the displaced residents should be taken into the special consideration. This policy categorizes projects based on displacement risk. A project involving the relocation of a large number of households is considered high-risk. High-risk projects require the implementation of large-scale resettlement schemes or plan and livelihood restoration programs for displaced communities. However, EPA-2019, EPR-2020 and LAA,1977 are salient to offer for the preparation of resettlement schemes to address the displaced communities by a high-risk project.

The EPR-2020 confirms that the Projects leading to the displacement of more than 100 people or loss of over 5 ha of forest or 50 MW generation capacity of hydropower projects require a full EIA but salient regarding the preparation of resettlement action plan or Involuntary Resettlement issues.

Hydropower projects in Nepal face significant resettlement problems and issues, primarily due to the involuntary displacement of people and communities. These challenges include inadequate compensation, lack of access to suitable resettlement sites, and disruptions to livelihoods and cultural practices. Furthermore, there are concerns about policy inconsistencies, bureaucratic delays, and the need for more investor-friendly regulations. The problem of involuntary resettlement caused by project activities has remained entirely neglected both at the policy level as well as in the regulatory domain. Thus, there is no central mechanism to oversee and deal with this emerging problem.

Similarly, there is a lack of integrated and updated policies regarding land acquisition, resettlement and rehabilitation and the existing laws and legal provisions are inadequate and 'not so effective,' and as the land valuation system is not scientific and systematic, this has added to the challenges in acquiring land of the private ownership for development works of public interests. Hence, involuntary resettlement in Nepal is a complex issue with legal frameworks in place, but there are challenges in ensuring that the process is fair, equitable, and protects the rights and livelihoods of affected communities.

VIII. WHY IS INVOLUNTARY RESETTLEMENT AS A PART OF EIA.....?

EIA is a process used to identify, predict, evaluate, and mitigate the potential environmental impacts for infrastructure development projects, and it aims to assess all potential impacts, including social and environmental ones. Involuntary resettlement is a significant social impact, so it's crucial to address it within the EIA process. EIAs often identify the need for involuntary resettlement, particularly when projects displace people, impact land, or affect livelihoods.

IX. CONCLUSION AND WAY FORWARD

In Nepal, involuntary resettlement is a critical component of EIA for hydropower projects, encompassing land acquisition, physical relocation, and economic rehabilitation. The EIA process, guided by both international regulations and domestic priorities, aims to mitigate social and environmental impacts associated with hydropower development. While hydropower offers a significant energy potential, the process of resettlement, particularly in a densely populated country like Nepal, presents complex challenges.

Some hydropower projects in Nepal may also be subject to international standards, such as (Refers to Section-5) those set by the World Bank or ADB, which may include requirements for land acquisition, engagement, and resettlement or preparation of RAP. The EIAs are crucial for hydropower projects, ensuring that development occurs sustainably. RAP is also vital, addressing the needs of those displaced by the project, particularly vulnerable groups. The EIA process, governed by Nepal's Environmental Protection Act and Rules, includes screening, scoping, Terms of Reference (ToR) development, and the final EIA report, which includes an Environmental Management Plan (EMP). RAPs, developed as part of the EIA, ensure fair compensation and support for affected individuals, including vulnerable groups.

➤ Way Forward

- EIAs and resettlement plans are closely linked. EIAs often identify the need for resettlement, and resettlement plans are developed to address the identified impacts. Resettlement plans are typically prepared as part of the EIA process to ensure that resettlement issues are addressed in a comprehensive and transparent manner. Hence, RAP should be prepared as a part of EIA to ensure that displaced individuals and communities receive adequate compensation and support to restore their livelihoods, and social risks associated with development projects.
- EIA reports should include a resettlement plan that outlines how the project will address involuntary resettlement impacts. These plans typically include details on compensation, relocation, livelihood restoration, and grievance mechanisms.
- National level Involuntary Resettlement Implementation Mechanism should be developed to address the involuntary resettlement due to the infrastructure's development projects.
- The policy-level gaps between EPR-2020, LAA-1977 and policy on Land Acquisition, Resettlement and Rehabilitation for Infrastructure Development, 2015 should be inter-linked, inter-relationship and integrated to each other's.

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