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**175**

# **Public Participation in Environmental Impact Assessment of Hydropower Plants in Nepal: A Context- specific Approach**



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Jon Munch-Petersen

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IWMI Working Paper 175

**Public Participation in Environmental Impact Assessment of  
Hydropower Plants in Nepal: A Context-specific Approach**

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## Acronyms and Abbreviations

A3	Arun-III Hydropower Plant
EIA	Environmental Impact Assessment
EPR	Environment Protection Rules (the legislation provisioning the environmental impact assessment procedure and public participation in Nepal)
HP	Hydropower Plant
MoSTE	Ministry of Science, Technology and Environment
NEA	Nepal Electricity Authority (responsible for the generation, transmission and distribution of electricity in Nepal)
PP	Public Participation
RoR	Run-of-the-River Hydropower Plant
T3	Tamakoshi 3 Hydropower Plant
UT	Upper Tamakoshi Hydropower Plant

## Conceptual Clarification

**PP:** *“It is the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future”* (Arnstein 2004).

**PP Process:** The process within EIA in which the citizens participate. A collective conception of methods of PP and its timely utilization in EIA.

**Proponent:** The actor owning the HP and the rights to sell the power generated by the HP. An actor initially possessing all the decision-making power. Therefore, the proponent is also responsible for sharing decision making with citizens throughout the EIA process.

**Purposes of PP:** The intended goals to be accomplished utilizing PP. Proponent purposes of PP determine how the PP process is utilized in regard to what methods of PP are utilized, when they are utilized and who will be allowed to participate in EIA.

**Run-of-the-River HP:** A mode of operation in which the HP uses the water that is available in the natural flow of the river. Run-of-the-river HP minimizes water storage and diversion of the flow in a river.

## Summary

This paper investigates the public participation (PP) process in environmental impact assessments (EIA) of three large-scale hydropower plants (HPs) in Nepal, with a view to improving the PP process to accommodate the interests and needs of local citizens impacted. The degree of utilization of PP in EIA is determined by the willingness of proponents (an individual conceptualization of the owner of the HP construction) to share decision making with citizens. It is the theoretical standpoint of this paper that improvements to the PP process can be implemented only within a given context, wherein the proponent allows sharing of decision making with citizens.

By making a comparison between the PP process as it is written in the Nepali EIA law, execution of it by proponents and citizen experience with its execution, discrepancies are identified and analyzed to ascertain the difficulties that are experienced and what this implies in terms of decision making. Recommendations for improving the PP process as experienced by citizens are proposed by seeking solutions to overcome the discrepancies identified and also through new methods and timing of PP. The work of three authors has been used for this theoretical exercise: Sherry R. Arnstein and her theory on the Ladder of Citizen Participation (Arnstein 2004); the article from O’Faircheallaigh (2010) on purposes for utilizing PP; and Abaza et al. (2004) on “good practice” in the timing and methods of PP in EIA.

The results of the analysis show that the PP process is executed in a top-down manner in all three cases, with PP allowing for very limited or no influence to be made on decision making. Regulatory changes have to be made in order to incorporate PP better into EIA, as well as focusing on incentives for complying with EIA legislation.



## 1. INTRODUCTION

Nepal is currently on the brink of a transition, where large-scale investments are made in developing the hydropower sector to cater to general livelihoods and a soaring industrial sector (Sarkar 2014; Office of the Investment Board 2012). While the current energy demand of Nepal amounts to around 950 megawatts (MW), the capacity of the national grid is a mere 677 MW (in 2014), of which most of the power is derived from hydropower plants (HP). With great water abundance and majestic geophysical features, beneficial to the building of large-scale water infrastructure schemes, HPs have been widely perceived as the obvious choice for generating electricity in Nepal for many years (dating back to 1911) (Ministry of Water Resources 2001; Adhikari 2006: 71). Half of the estimated theoretical power potential (half of 83,000 MW) from rivers in Nepal is deemed economically feasible for hydropower development. However, only 677 MW was developed in 2013, with the biggest HP, in terms of power capacity, being the Kali Gandaki (144 MW) (Thanju 2013). Among 10 other HPs (10-150 MW), the Upper Tamakoshi HP (456 MW) was the biggest HP under construction in 2014) (the first case study in this report). The Tamakoshi-3 HP (650 MW) (the second case study in this report) is in the pipeline for approval along with six other large-scale HPs of similar capacity. Arun-III (900 MW) (the third and last case study in this report) is projected to be the biggest in terms of capacity in Nepal and is contracted to an Indian company (Thanju 2013). Although still uncertain, the Nepali government is preparing a plan for developing 10,000 MW and 25,000 MW of hydropower in the coming 10 and 20 years, respectively. Three mega water storage projects have been proposed and discussed intensively: (i) The Karnali Chisapani (10,800 MW) multipurpose storage project, for which a feasibility study has been conducted; (ii) the 6,450 MW Pancheshwar multipurpose project, on the border of the Mahakali River, proposed as a joint venture between India and Nepal; and (iii) the proposed 3,300 MW Septa Koshi High Dam project, also an Indian/Nepali joint venture, designed for flood control, irrigation and electricity generation (Thanju 2013).

### A Power Struggle

With the Nepali HPs projected to have extensive storage capacity as well as diverting a significant part of the water flow, the national HP strategy can be expected to put direct stress on many local communities. Such dam-related impacts can include (i) degradation of ecosystem services (Richter et al. 2010; SNIFFER 2011; Ecologic 2007; Watershed Watch 2007; Moore et al. 2010); (ii) displacement of local citizens (Richter et al. 2010; SNIFFER 2011); and (iii) changes to socioeconomics of rural citizens (Watershed Watch 2007). In Nepal, a power struggle is hereby set between local citizens and HP proponents. While citizens aim to safeguard their interests, HP proponents are seeking financial gains. The fulcrum for this power struggle is the Environmental Impact Assessment (EIA) process. EIA should, through Public Participation (PP) processes, allow citizens to take part in decision making when implementing HPs (Abaza et al. 2004).

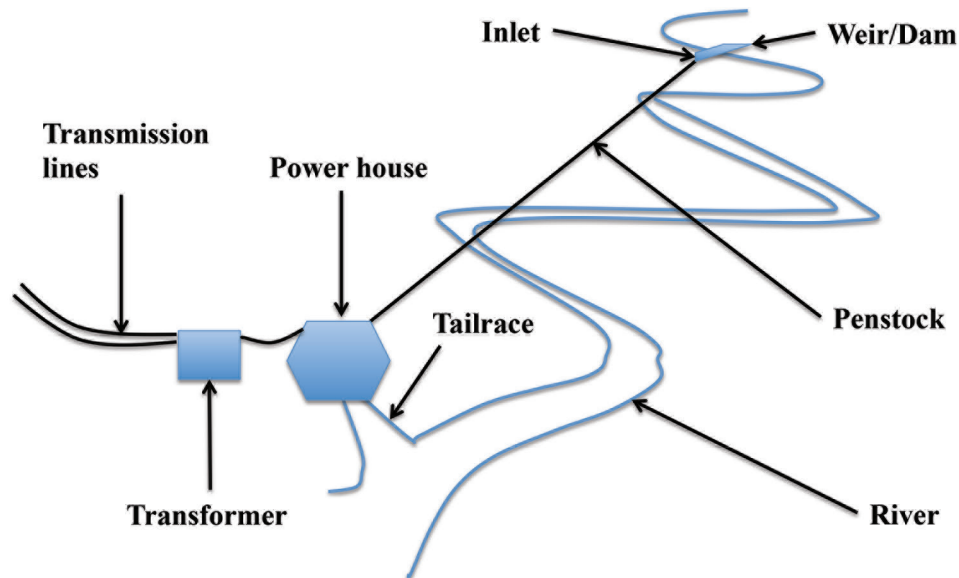
Similar to many other developing countries, PP processes in Nepal have been documented as being poorly executed, resulting in low quality and simplistic EIA reports (Bhatt and Khanal 2009, 2010). Also, poor understanding of socioeconomic and cultural characteristics of communities has resulted in superficial impact identifications, and poor identification and prioritization of compensation measures (Chettry 2003).

This report describes the PP processes as executed in three HPs and subsequently proposes recommendations to improve these processes, in order to better account for the needs of citizens. Recommendations to improve PP are provided, by identifying how extending citizen influence on decision making can mutually benefit citizens, proponents and the Nepali government.

## 2. IMPACTS FROM HYDROPOWER PLANTS

Many HPs (including the three case studies considered in this report) proposed to be implemented in Nepal combine the Run-of-the-River (RoR) design with significant storage and diversion of river water (Figure 1).

FIGURE 1. Design of a Run-of-the-River HP with a dam. A proportion of the water from the river is diverted through the inlet down the penstock and into the power house where mechanical electricity is generated. Through the tailrace (sometimes called outlet), the same proportion of water is diverted back into the river system.



Source: Original diagram available at <http://www.microhydropower.net/basics/components.php> (accessed on August 15, 2017).

A proportion of the river water is diverted through the intake at the dam site, down the penstock and into the power house where mechanical electricity is generated. Through the tailrace (sometimes called outlet), the same proportion of water is diverted back into the river system. The impacts imposed on local citizens from the RoR design with a dam can be divided into three categories: (i) impoundment structures, (ii) reduced/altered flow, and (iii) construction phase. Impoundment structures, such as dams, fragments the river, making migration for riverine animals and transport of nutrients and sediment difficult, if not impossible (SNIFFER 2011; Ecologic 2007; Watershed Watch 2007). Reduced river flow and shallower water on river reaches between the dam and tailrace impact fish habitat, foraging and migration patterns (SNIFFER 2011; Richter et al. 2010). A review of fish loss data from various cases between the 1980s and 2007 (Richter et al. 2010) makes a strong case for dam-induced fish impacts. The Pak Mun Dam in Thailand had 50 fish species disappearing, and a decrease in fish catch by 60-80% after commissioning of the dam. The Three Gorges Dam (the world's largest) induced a 50% drop in fish catch following the construction of the dam, while a drop in fish catch from 350 tonnes/year to 25 tonnes/year was observed following implementation of the Salandi Dam in East India (Richter et al. 2010). Reduced river flow also increases the risk of waterborne diseases through increases in water temperature (SNIFFER 2011). Additionally, reduced flow changes natural flood patterns, which are important for agricultural practices (SNIFFER 2011). When the Bakolori Dam was built on the Sokoto River in Nigeria, the cultivated area dropped from 90% to 3% of the floodplain, resulting in a decrease in crop yield

worth USD 400,000/year (Richter et al. 2010). Impacts that could occur during the construction phase include creation of an access road, transmission lines, construction of storage areas, power house and a possible dam and pipe systems. Such constructions claim large areas of land, changing the patterns of human livelihood, causing displacement, changing job opportunities, and leads to changes in income and food availability. The World Commission on Dams estimates that the total number of people directly displaced as a result of dam construction worldwide was 40-80 million in 2010 (Richter et al. 2010). Further consequences include pollution (air, water, nature, visual, noise), disease outbreak from the migration of an outside workforce and overall increase in human activity (Watershed Watch 2007). In the Bhotekoshi River Basin in Sindhupalchowk District, Nepal, the bacteriological quality of the water, as a result of contamination from human waste, posed serious health risks to consumers (Bhatt et al. 2011).

### 3. PUBLIC PARTICIPATION IN ENVIRONMENTAL IMPACT ASSESSMENT AND ITS INFLUENCE ON DECISION MAKING

Before a developer can begin construction of a HP in Nepal, an EIA report, containing details of potential environmental and social impacts, must be submitted to the appropriate government body for review and approval. It is widely recognized that PP is highly desirable as an integral part of the EIA process. It is assumed that PP will improve the final design on impact assessment, mitigation measures, acceptance of the project by the citizens and prioritization of compensation (Slootweg et al. 2001; Abaza et al. 2004). In order to understand the concept of PP in EIA, the concept must be broken down into three separate parts in which one determines the other (O’Faircheallaigh 2010).

As illustrated in Figure 2, purposes for utilizing PP in EIA (referred to as the proponent purpose of PP) are derived from a context in which proponents seek to implement a concrete project. Purposes of PP, formed by internal and external pressure and motives, can therefore be many: Sensitive consideration of alternatives, impact estimation, mitigation measures and trade-offs, and ensuring citizen acceptance of projects and future government projects per se (Abaza et al. 2004: 65; O’Faircheallaigh 2010).

FIGURE 2. Linkages between purposes of PP determining the PP process, which in turn determines citizen influence on the decision-making processes.

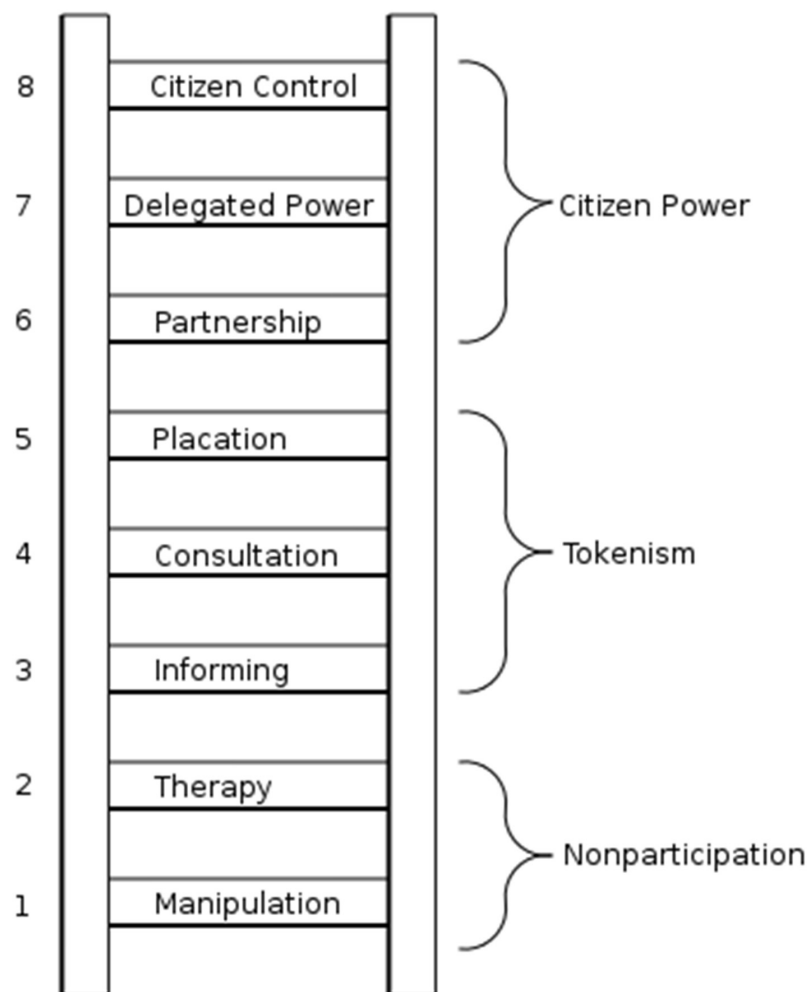


#### 3.1 The Ladder of Citizen Participation

In order to differentiate and characterize the purposes of PP in EIA, and thereby evaluate the implications on decision-making processes, “the Ladder of Citizen Participation” (Arnstein 2004) is used and illustrated in Figure 3. This theory describes the degree of PP in three broad categories according to the degree of public influence on decision making. In “*Nonparticipation*”, citizens are placed in the role of rubberstamp advisory groups, where officials are persuading, educating

and advising them. In this classification, the term PP is often used to ‘prove’ that the public are involved in processes, even though they have not been included in any form of discussion, and are sometimes not even notified, thus leaving them completely without being able to influence decision making. In the “*Tokenism*” category, citizens are heard, but under restricted conditions, giving them no real influence on the decision-making processes. The power holders retain their right to decide by upholding the majority of seats in the decision-making board. The methods often utilized for PP in this category are typically one-way information, news media, pamphlets, posters and responses to inquiries. Such information dissemination leaves very little room for negotiation, especially if information is disclosed at a very late stage in the planning process. Two-way communication, with information dissemination between citizen and proponent, such as attitude surveys/questionnaires, public hearings and neighborhood meetings, can however also be utilized in this category. With “*Citizen Power*”, the purpose is to create partnerships, wherein citizens have a genuine influence on plans and projects. Citizen leaders and power holders should be accountable to an organized community power base to such an extent that citizens can veto if differences between opinions cannot be resolved. Power holders and citizen leaders, therefore, have to bargain with the citizens and not the opposite (Arnstein 2004).

FIGURE 3. Arnstein's ladder of citizen participation.



Source: Arnstein 2004



### 3.2 The Complexity of Purposes of Public Participation

Arnstein (2004) treated each form of participation as separate and distinct, rejecting interaction between different forms of PP: citizens can only achieve access to *Citizen Power* by refusing to participate in forms of PP that equate to *Nonparticipation* or *Tokenism* (Arnstein 2004). The difficulty with such an interpretation is that it ignores PP processes that can substantially enhance the quality of citizen influence on decision making by expanding and contesting the proponents available knowledge base. The approach of proponents to EIA can differ significantly from that of the citizens due to disparities in worldviews, epistemologies and targets for assessing potential impacts. Proponents can benefit from citizen information to make qualified decisions (O’Faircheallaigh 2010). Sharing of decision making is, therefore, possible through provision of information to decision makers, which happens in the Tokenism category. This was illustrated by previous fieldwork conducted by the author of this working paper in Guangdong Province of China. Citizen questionnaires identified an overlooked impact of alteration of *Feng Shui* of a local village (bad fortune for the residents and their families). Despite having no power to veto, this bottom-up knowledge generation enabled the location of the highway to be changed locally, sustaining the *Feng Shui* as it was (Munch-Petersen 2013). Arnstein also rejects the interconnectedness of purposes of PP (O’Faircheallaigh 2010). With reference to the previous example, the purpose of PP might have been to enhance the quality of empirical information for decision makers. However, such a purpose also works as a tool for enhancing other purposes of PP, such as community empowerment, confidence in participating in planning processes and enhancement of citizen acceptance toward government projects (O’Faircheallaigh 2010). Purposes of PP can, therefore, also be seen in relation to wider debates about PP in policy making (O’Faircheallaigh 2010), thus solidifying the political sensitivity of the topic and importance of the context in which the EIA process must be seen. This implies that wider governance issues might be of relevance when recommending improvements to the PP process in Nepal. As such, the purpose of PP is more complex than described by Arnstein (2004). Purposes, and its derived components constituting the PP process, interact with other components and purposes of PP as well as wider governance issues, resulting in various consequences for decision making (O’Faircheallaigh 2010).

## 4. ENVIRONMENTAL IMPACT ASSESSMENT AND PUBLIC PARTICIPATION - AN APPLIED DISCIPLINE

An EIA can be carried out in connection with development projects, constructions projects, strategic plans and policies. For construction projects, a detailed EIA report is often needed for large projects with potentially significant impacts for the surrounding environment. EIA is an important planning instrument, providing vital information on potential biophysical and socioeconomic impacts. With an awareness of such impacts, projects may be assessed in more detail when planning alternatives, compensation, mitigation, etc. (Abaza et al. 2004).

Abaza et al. (2004) explained these EIA steps through a description of “good-practices” for utilizing PP throughout the EIA process (illustrated in Figure 4). Emphasis is directed mostly toward the timing of PP, but reference is also made to methods of PP in addition to whom to include. The EIA steps where PP is often utilized are listed below.

**Scoping:** The scoping stage is recognized as one of the fundamental stages for involving citizens in EIA. In essence, PP during scoping provides for an appropriate and cost-effective EIA process. The purpose is to provide information on important issues and impacts, which need to be studied further,



and the mitigation measures and alternatives to proposed actions need to be identified. The scoping stage should be carried out in an open and inclusive way, designed to bring about the information needed for citizens to take part in the decision-making process. This is done by involving the public to assist in setting the boundaries of the EIA study. In this way, important citizen concerns and interests are less likely to be overlooked when preparing the Terms of Reference (ToR) - the document summarizing the focus points and the overall plan for further work with EIA (Abaza et al. 2004). It is important that information provided at the scoping stage is non-technical and easy to understand. The methods used for including the public at this stage can be through surveys, public notifications, workshops or focus group interviews, public meetings or hearings (Abaza et al. 2004).

FIGURE 4. The EIA process step by step, beginning with the first column. The initial screening stage determines whether an EIA process is needed. The scoping stage identifies the range of impacts to be assessed. The EIA process ends with a decision-making stage for approval of the EIA report, followed by monitoring of impacts and mitigation.

**Screening** - to determine whether or not a proposal should be subject to EIA and, if so, at what level of detail.

**Scoping** - to identify the issues and impacts that are likely to be important and to establish terms of reference for EIA.

**Examination of alternatives** - to establish the preferred or most environmentally sound and benign option for achieving proposal objectives.

**Impact analysis** - to identify and predict the likely environmental, social and other related effects of the proposal.

**Mitigation and impact management** - to establish the measures that are necessary to avoid, minimize or offset predicted adverse impacts and, where appropriate, to incorporate these into an environmental management plan or system.

**Evaluation of significance** - to determine the relative importance and acceptability of residual impacts (i.e., impacts that cannot be mitigated).

**Preparation of environmental impact statement (EIS) or report** - to document clearly and impartially impacts of the proposal, the proposed measures for mitigation, the significance of effects, and the concerns of the interested public and the communities affected by the proposal.

**Review of the EIS** - to determine whether the report meets its terms of reference, provides a satisfactory assessment of the proposal(s) and contains the information required for decision making.

**Decision making** - to approve or reject the proposal and to establish the terms and conditions for its implementation.

**Follow up** - to ensure that the terms and condition of approval are met; to monitor the impacts of development and the effectiveness of mitigation measures; to strengthen future EIA applications and mitigation measures; and, where required, to undertake environmental audit and process evaluation to optimize environmental management.\*

Source: IAIA 1999: 3).

Note: \* It is desirable, whenever possible, if monitoring, evaluation and management plan indicators are designed so they also contribute to local, national and global monitoring of the state of the environment and sustainable development.

**Preparation of the EIA report:** During this stage, all the information is assessed and assembled into a final EIA report, which is submitted to the appropriate government body responsible for project approval. The EIA report should be made public, and include an executive, non-technical summary which can be easily understood by citizens (Abaza et al. 2004). Before the EIA report is sent for approval, the draft report will, during the *review of the EIA report*, be checked for its completeness, to ensure its adequacy for approval. This evaluation is made against the ToR, which was set through the scoping stage. PP is usually an integral part of the review of the EIA report stage (Abaza et al. 2004), where means for inclusion can vary from public hearings to mere notifications. Opinions from citizens, environmental experts, nongovernmental organizations (NGOs), government actors and other parties interested in the project should be summarized in the final EIA report, along with proponent arguments on how these opinions are valued and addressed (Abaza et al. 2004).

**Follow-up:** PP has also been found to be a valuable tool in the post-decision making stage of the EIA process. *Monitoring* is necessary for large and complex projects, such as HPs, to accommodate the inherent uncertainty of the scale, and significance of the often subtle and slowly manifesting impacts on the ecosystem, thereby verifying the accuracy of the predictions made in the initial stages of the EIA process. The function of monitoring also serves the purpose of ‘risk assurance’ to accommodate possible concerns of the local people at post-construction stage. Finally, there is the very real probability that mitigation measures or citizen compensation suggested in the EIA report might in fact not be acted upon by proponents at post-construction stage. Follow-up ensures that attention is given to proponents following through with mitigation and compensation (Abaza et al. 2004).

#### **4.1 Environmental Impact Assessment and Public Participation in Developing Countries**

The practical implementation of PP in EIA in developing countries often differs from the way in which normal “good-practices” are promoted by international actors and financial contributors - a discrepancy also seen in developed countries. Experience shows that developing countries face financial, structural and resource constraints when instituting EIA arrangements and implementing actual EIA processes (Lohani et al. 1997). Much EIA legislation does not have sanctions for noncompliance and are therefore often met with such (Lohani et al. 1997), resulting in citizens lacking opportunities to influence decision making (Abaza et al. 2004). PP processes in developing countries can be further characterized by: (i) poor identification of interested and affected citizens; (ii) illiteracy, and linguistic and cultural diversity, which make mutually intelligible communications difficult; and (iii) lack of citizen knowledge regarding the scale and nature of certain types of development projects as well as on EIA processes per se (Abaza et al. 2004).

### **5. HYDROPOWER AND ENVIRONMENTAL IMPACT ASSESSMENT IN NEPAL**

As mentioned in the introduction, Nepal struggles to meet its national energy demand with its current power grid capacity. In 2008, the Nepali government declared the situation as a “national energy crisis” (ICC n.d.). Internally, the deficiency in hydropower capacity is reflected in load shedding of up to 12 hours a day during wintertime. The demand for more power capacity comes from citizens and industry, with the former seeking improvements to general livelihoods, such as lighting, cooking, heating, etc., and the latter experiencing reductions of up to 40% of industrial operations due to power shortages (Sarkar 2014). Recently, the private sector has managed to organize itself and become an important player in developing the hydropower sector. By forming the interest organization, Independent Power Producers, the private sector signed power purchase agreements with the Nepal Electricity Authority (NEA) to sell electricity internally and externally. In the **national hydropower strategy** of developing 25,000 MW of hydropower capacity by 2030, infrastructural properties should by then allow for 18,000 MW to be exported (ICC n.d.).

To assist in pulling Nepal out of its electricity struggle and into a position as a regional electricity power house, Nepal’s Finance Ministry has joined hands with the International Finance Corporation (IFC). IFC is a World Bank Group private sector arm providing financial support of around NPR 600 billion (USD 6 billion in 2014). Since 2008, IFC has been working closely with Nepal through investments and advisory services to boost private sector growth. Besides tourism, financial markets, transportation and trade finance, IFC also promotes private investment in infrastructure, such as HPs. IFC recognizes the power shortage in Nepal as being the main barrier

to improving the private sector. This is the reason for finance support to Nepal being bound to the development of HPs (IFC 2014). Financial backing for HPs is granted on conditions that EIA practices are aligned with those of the internal EIA policies of IFC and the national policies of Nepal. Such policies can, therefore, have substantial influence on the execution of PP in EIA (IFC 2012).

IFC PP policies (IFC 2012):

- Identify and evaluate environmental and social risks and impacts of the project.
- Adopt a mitigation hierarchy to (i) anticipate and avoid, or (ii) minimize, where avoidance is not possible, or (iii) compensate/offset for risks and impacts to workers, affected communities and the environment, where residual impacts remain.
- Promote improved environmental and social performance of clients through the effective use of management systems.
- Ensure that grievances from affected communities and external communications from other stakeholders are responded to and managed appropriately.
- Promote, and provide means for, adequate engagement with affected communities throughout the project life cycle on issues that could potentially affect them, and ensure that relevant environmental and social information is disclosed and disseminated.

IFC has, however, been criticized for ending and investing billions of dollars, which are not in fact targeted primarily at helping the impoverished. Projects financed by IFC have overlooked assessments of environmental and social impacts (Bretton Woods Project 2013).

With Nepal being a major source for easily tapped energy and India suffering from severe power shortages, the Nepali electricity venture constitutes a field of interest beyond the national borders: *“Thus, any fresh power initiative there is opportunity for Indian companies. We are always keen on shouldering responsibility to harness this,”* says Mr. A. B. L. Srivastava, Director (Finance) of Indian hydropower major NHPC (Sarkar 2014). A power trade agreement has been signed between India and Nepal for the coming 50 years *“and its validity shall be extended by mutual consent”* (Sarkar 2014).

This national context for hydropower development in Nepal, with its wide array of stakeholders, puts immense pressure on the approval of HPs, potentially leaving citizens with negligible influence on decision-making processes in EIA - a scenario commonly witnessed in developing countries. On the contrary, internal pressure from the Nepali government, expressed as **purposes of PP**, and policy standards set by IFC, might potentially put pressure on proponents to execute PP accordingly. The national purposes of PP when developing EIA were formulated in 2001 and are: (i) bridging conflicts and avoid hostilities; (ii) win public support through transparent negotiations, which speed up the development process by avoiding delays and problems; (iii) create local feelings of ownership; and (iv) improve identification of mitigation measures (DOED 2001b).

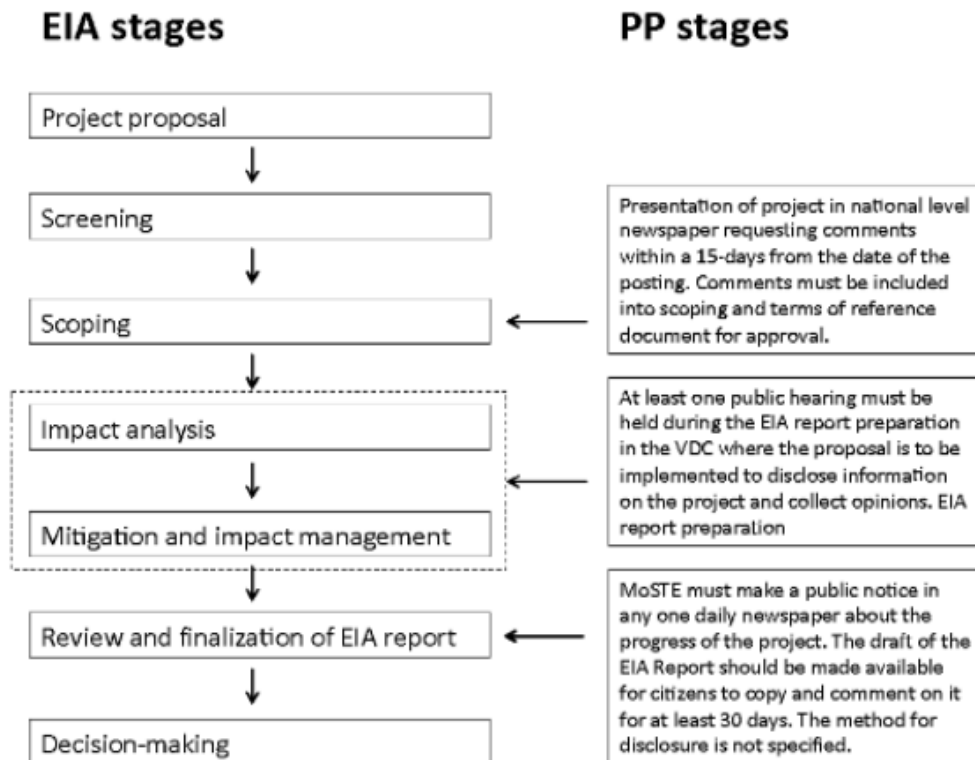
## 5.1 Public Participation Process in Environmental Impact Assessment in Nepal

The Environment Protection Act and the Environment Protection Rules (EPR) amended in 1999 mark the most significant contributions to the work with EIA in Nepal. These make the integration of EIA legally binding for prescribed projects. The EPR adopts the environmental assessment criteria mentioned in the national EIA guidelines from 1993 (NEA 2013).

The **screening** determines whether the project is EIA liable. A screening list is developed in the EPR (schedule 2) to standardize what proposals require EIA. In regard to HPs, EIAs are required when one of the points in Appendix A is exceeded. If the screening determines that EIA

is required, the EIA process should be developed in line with the EPR, a process similar to the United Nations Environment Programme (UNEP) flowchart (Figure 5): The EIA is initiated at the scoping stage and followed by the impact analysis and the mitigation management plan, and ends with the review of the EIA report and the final decision-making process (Nepal Law Commission 1997, Environmental Protection Rules, Chapter 2).

FIGURE 5. The PP process in EPR.



During the **scoping** process, the public, along with NGOs and other citizen stakeholders, are included for the first time. The method for this PP is in the form of a brief presentation of the project posted in one national-level newspaper, as well as in schools, hospitals and health posts of the affected municipalities. The postings request citizens to submit their comments within a 15-day period. Along with comments from citizens and the methods in which these have been addressed, a scoping document is sent for approval (Nepal Law Commission 1997, Environmental Protection Rules, Chapter 2, Rule 4, Sub-rule 1-2). At least one **public hearing** must be held in the Village Development Committee (VDC) where the proposal is to be implemented. This is done to “collect opinions and suggestions” while “preparing the report of environmental impact assessment” (Nepal Law Commission 1997, Environmental Protection Rules, Chapter 2, Rule 7, Sub-rule 2). EPR lack further precise descriptions of approaches for the development of the public hearings. As with the scoping document, the comments from the public hearings should be written into the EIA draft report along with the methods in which opinions have been addressed. The Department of Electricity Development has 21 days to approve the EIA draft report and forward it to the Ministry of Science, Technology and Environment (MoSTE), which must notify the public via one daily newspaper about the progress of the project. This section of EPR also states that the draft of the EIA report should be made available to citizens for **review**, and to copy and provide

feedback for at least 30 days from disclosure. It is, however, not concretized how the draft of the EIA report should be made available to the public (Nepal Law Commission 1997, Environmental Protection Rules, Chapter 2, Rule 11, Sub-rule 1-2). Feedback on the EIA draft report provided by citizens is, during a 60-day examination period, valued by MoSTE, after which the report can get **final approval**. On the other hand, if approval cannot be granted due to “*special reason*” (Nepal Law Commission 1997, Environmental Protection Rules, Chapter 2, Rule 11, Sub-rule 6), MoSTE is granted another 30 days to mediate between the stakeholders (Nepal Law Commission 1997, Environmental Protection Rules, Chapter 2, Rule 11, Sub-rule 5-6). Nowhere in the legislation is it stated that the EIA report should be publicized after finalization of the EIA process, which is strongly recommended by Abaza et al. (2004). These consultation processes are the minimum requirements when developing EIA in Nepal.

Any proponent contravening with the provisions of EPR is punishable with a fine of up to NPR 50,000 (USD 800 in 2014), which is certainly an insignificant amount for any large company. If a proposal is implemented without the approval of MoSTE, or other relevant government agency, or if the implementation of the proposal does not comply with the conditions set with the approval, the government agency is authorized to halt the project and impose a fine of up to NPR 100,000 (USD 1,600 in 2014).

To summarize, the PP process should be executed with (i) information dissemination from proponent to citizen during the scoping stage with provision for obtaining feedback from citizens; (ii) public hearings during preparation of the EIA report with provision for consultation; and (iii) disclosure of the draft of the EIA report during the review stage.

Viewing the PP process as a whole, convergence is coincident with the Tokenism category on the “ladder of citizen participation” by Arnstein (2004). Here, citizen rights along with objective information on the project are disclosed through one-way information such as pamphlets and postings, with provision for responses combined with consultations such as public hearings. The Tokenism category allows citizens to be heard, but under conditions to which they lack assurance of real influence on decision making. However, according to O’Faircheallaigh (2010), information sharing on the Tokenism category, from citizens to proponents, might very well result in shared decision making by filling in proponent information gaps and contesting the existing proponent information base. Also, as EPR makes it mandatory to include citizen comments (and the ways in which these have been addressed) into the scoping documents for approval, participating during the scoping stage might actually allow citizens to influence decision making.

## **5.2 Past Experiences with Environmental Impact Assessments in Nepal**

Previous studies have shown numerous discrepancies in the practical implementation of EIA in Nepal. Guidelines and policies lack precise description of approaches for the development of the EIA report in relation to methods for collecting baseline data, analysis of impact mitigation, public hearings and monitoring (Bhatt and Khanal 2010). The 60-day time limit set for approval of the EIA report is often exceeded - even the extra 30 days are often exceeded. Hereafter, MoSTE can be taken to court according to EPR, although this is rarely done (Bhatt and Khanal 2010). During the approval of the scoping document, the Working Schedule and the EIA report, MoSTE may form a review committee for approval/disapproval of these documents. The committee is, however, formed on an ad hoc basis, gathering experts who have sparse knowledge of the actual case. Nepal has not introduced an accrediting system for EIA experts developing the actual EIA reports. Consequently, anybody can be hired to conduct the EIA process, even the proponent itself. Hence, the quality of the EIA report, in many cases, remains simplistic and unprofessional. With baseline

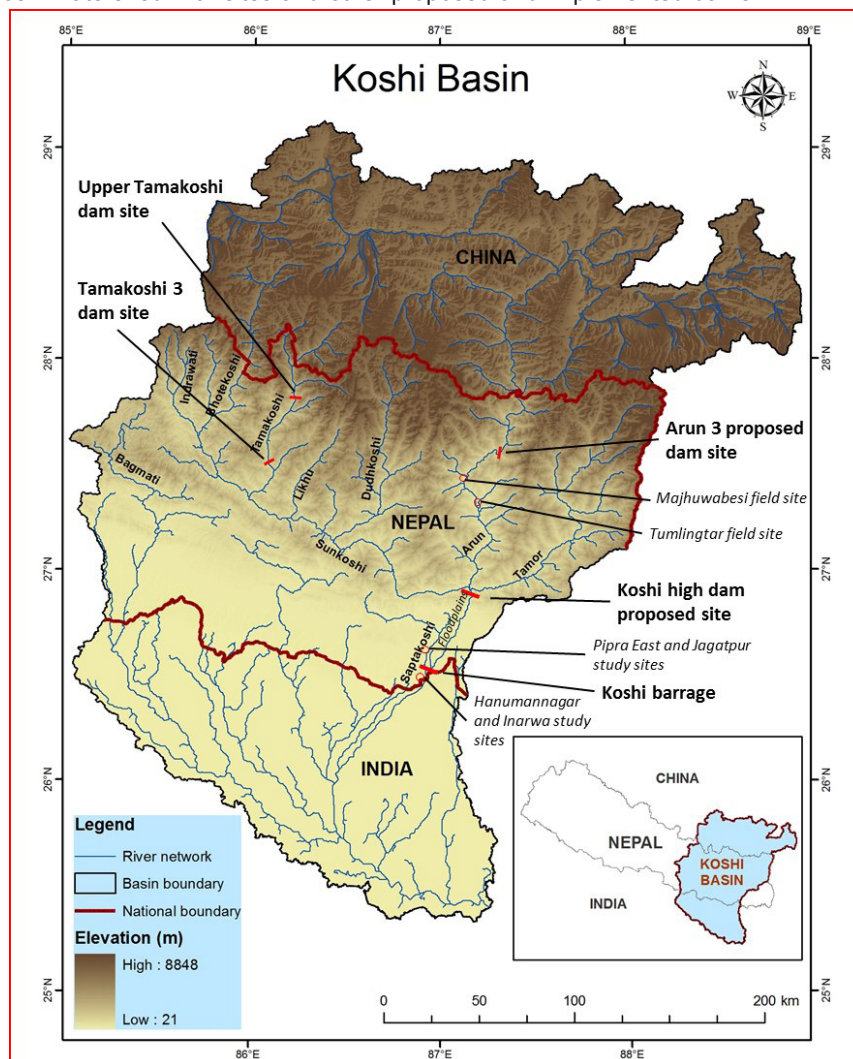


data and impact predictions poorly measured, monitoring is often completely neglected (Bhatt and Khanal 2009). As part of the reason for cancellation of the World Bank-supported A3 HP project 20 years ago, the EIA procedure was found to be insufficient as a tool in decision making and as a tool in assessing the sustainability of the project (Chettry 2003). Environmental sustainability was assessed over a small geographical area and the time-span was likewise low, encapsulating strictly short-term impacts from the initial construction and impetus of operation. Furthermore, the EIA failed to describe the socioeconomic and cultural characteristics of the area, resulting in the identification of superficial impacts and mitigation strategies.

## 6 CASE STUDIES

The HPs selected for this study are Upper Tamakoshi (UT), Tamakoshi-3 (T3) and Arun-III (A3), which are all located in the northeastern part of Nepal in the Koshi River Basin (Figure 6), which covers a total area of 90,400 km<sup>2</sup> of Tibet, India and Nepal. Field visits were undertaken in October and November 2013.

FIGURE 6. Koshi watershed with sites and other proposed and implemented dams.



Source: IWMI Nepal, with acknowledgement to Utsav Bhattarai, consultant, IWMI.

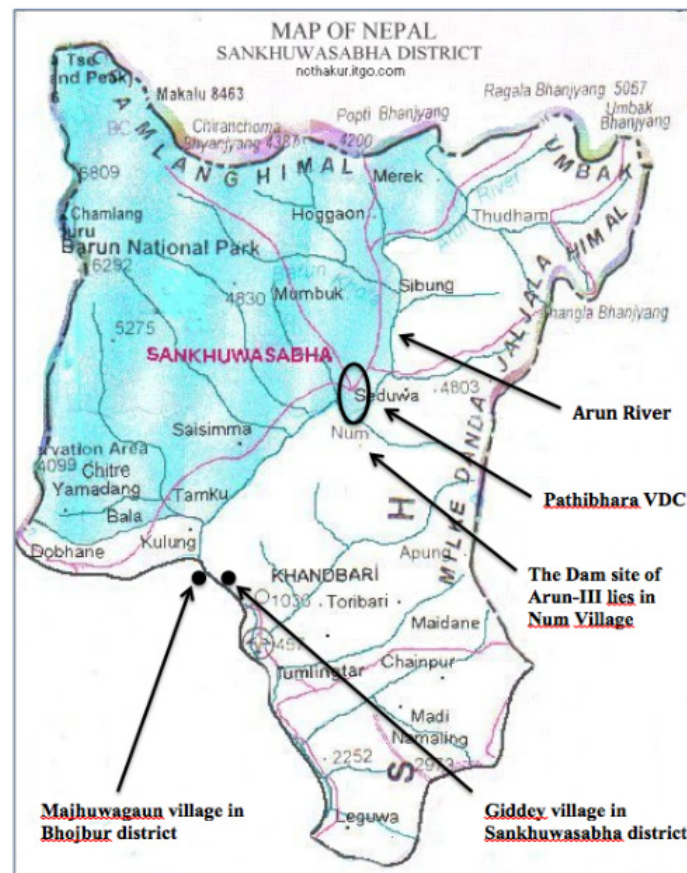
The specific HPs were selected as case studies based on the following four criteria:

1. EIA process completed (in order to obtain information on the EIA process)
  - The EIA process was completed in all cases
2. EIA process commenced after 1997 (as EPR was made in effect in 1997)
  - The EIA process was commenced after 1997 in all cases
3. Large power and storage capacity (significant impact implications)
  - All three cases have large capacity and storage
4. EIA report available (in order to obtain information on PP processes)
  - UT EIA report and T3 EIA summary report retrieved. A3 EIA report not retrieved.

## 6.1 Interviews, Observations and Case Presentation

Arun-III is scheduled to lie near Num Village in Sankhuwasabha District. Upper Tamakoshi and Tamakoshi-3 will be located in Lamabagar and Namdu VDCs, respectively, both in Dolakha District (see Figure 7).

FIGURE 7. A3 lies near Num Village in Sankhuwasabha District. Four household surveys were carried out in the Village of Majhuwagaun in Bhojpur District; four household surveys and one focus group discussion were carried out in the village of Giddey in Sankhuwasabha District; observations and sporadic questioning were carried out in the village of Tumlingtar; and one interview was conducted with three representatives from Pathibhara VDC.



Source: Original map downloaded from [http://deeliprai.yolasite.com/resources/Manebhanjyang/sankhuwasabha\\_districtMap.jpg](http://deeliprai.yolasite.com/resources/Manebhanjyang/sankhuwasabha_districtMap.jpg)

### Data collection for Arun-III case study

October 19, 2013: Meeting with Indian A3 proponent SJVN Ltd. in Kandbari VDC.

October 19, 2013: Meeting with **Arun Stakeholder Forum**, representing citizens from VDCs upstream of A3 - Num, Pathibhara, Makalu and Didhing.

October 20-22, 2013: **Eight household surveys** and one **focus group discussion** completed in VDCs downstream of A3 - Majhuwagaun VDC in Bhojpur District, and Giddey and Tumlingtar VDCs in Sankuwasabha District.

### Data collection for Upper Tamakoshi case study (Figure 8)

November 28: An interview with the **Environment and Public Relation Chief of UT**.

November 28: Two interviews with a **local farmer** and the **Civil Society of Dolakha District** in Singati VDC - 4 km downstream of UT.

### Data collection for Tamakoshi-3 case study (Figure 8)

November 28: Interview with a **local politician and citizen representative** from Sahara VDC downstream of T3.

FIGURE 8. Dolakha District and the sites for UT and T3 HPs as well as the sites for empirical data gathering. UT lies 6 km south of the Tibetan border, while Tamakoshi 3 lies just southeast of Charikot Village. Two interviews on UT conducted in Singati Village. Interview on T3 conducted with a local politician and citizen representative from Sahare (interview conducted in Charikot).





## 6.2 Case Presentations and Public Participation Processes

Case presentation (information from interviews, household surveys, EIA reports and secondary literature)			
	A3	UT	T3
<b>Proponent and financier</b>	SJVN Ltd. India - Indian HP company, Nepali government.	Nepal Electricity Authority	SN Power Holding Singapore Pte. Ltd. - Norwegian HP company, Nepali government.
<b>EIA execution</b>	Same Indian HP company	Norconsult AS - Norwegian consultancy company	SWECO Norge AS - Norwegian consultancy company
<b>Electricity beneficiary</b>	Majority to North Indian power grid	Nepali power grid	Nepali power grid
<b>HP Type and properties</b>	900 MW RoR with dam	<ul style="list-style-type: none"> <li>• 456 MW RoR with dam</li> <li>• Tailrace close to dam</li> <li>• Water flow diversion: 45.54 m<sup>3</sup>/s</li> <li>• Storage reservoir: 21.3 ha</li> <li>• 800 m high head</li> </ul>	<ul style="list-style-type: none"> <li>• 600 MW RoR with dam</li> <li>• Reservoir length: 15.7 km (to Singati Bazaar)</li> <li>• Highest and lowest regulated water level 940-890 meters above sea level (masl)</li> <li>• Total reservoir volume: 0.16 km<sup>3</sup>. A medium-size reservoir (Batuca and Jordaan 2000)</li> </ul>
<b>Compensation and mitigation</b>	No information could be gathered	<ul style="list-style-type: none"> <li>• Land acquisition compensation</li> <li>• Relocation costs compensation</li> <li>• Infrastructure development</li> <li>• Forest and wildlife compensation</li> <li>• Skill development program: Agricultural practice, water management, construction training, community development, environmental awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Indigenous development</li> <li>• Social/cultural development</li> <li>• Livelihood development</li> <li>• Landscape development</li> <li>• Community infrastructure development</li> <li>• Resettlement</li> </ul>
<b>Households/ study areas affected by the project and socioeconomics</b>	<ul style="list-style-type: none"> <li>• T3: 106,000 affected by HP (T3 EIA report). Population distribution upstream (inundated)/ downstream (regulated flow): 50%. Households affected by the project chapters were excluded from the UT EIA report sent to the author.</li> <li>• Majority of landless and part/tenant farmers are from marginalized castes (Mallam and Tarai Dalit). Tenants possess small plots of land, owing half of their seasonal harvest to landlords. Highly dependent on fisheries (cash and nutrition) and flood-recession agriculture (Khet land) with paddy, wheat and lentils. Migrant labor is also an important net income source.</li> <li>• Livestock (especially sales of cow and buffalo milk) is an important income source for landowners.</li> <li>• 20-65% illiteracy rate, women often with no education.</li> <li>• 30-50% do not use piped drinking water and do not have toilet facilities.</li> <li>• River used for recreational purposes.</li> <li>• Capacity to form stakeholder interest groups (consisting of high castes: Chhetri and Brahmin).</li> </ul>		
<b>EIA report</b>	Not publicized	Not publicized	Summary publicized

PP process as executed and experienced by proponent (information from EIA reports and interviews)			
	A3	UT	T3
<b>Scoping stage</b>	No information could be obtained. Proponent was reluctant to disclose information and the EIA report could not be located	<ul style="list-style-type: none"> <li>Public notice in national-level daily newspaper</li> <li>Scoping meetings after public notice to consult people regarding their concerns and ideas</li> <li><b>Stated purpose of PP:</b> Inform the public and request comments (EIA report; 8.2.1, not publicized)</li> </ul>	<ul style="list-style-type: none"> <li>Public notice in two national-level newspapers</li> <li>Ten letters received representing 50 people from eight institutions (the institutions are not specified)</li> <li><b>Stated purpose of PP:</b> Seek opinions on impacts on physical, chemical, biological, socioeconomic and cultural environment (SWEKO Norge AS 2009)</li> </ul>
<b>EIA report preparation stage</b>	No information could be obtained	<ul style="list-style-type: none"> <li>Means to inform citizens of hearings/meetings: Public notice in national-level daily newspaper and TV. Postings in major settlements</li> <li>Public hearings (250 people). Informal meetings (50 people) in areas of unrest</li> <li>Citizen concerns: Land acquisition, compensation, transparency in EIA, infrastructure (roads, electrification, post office, water supply), employment opportunities, capacity building, health and safety for UT workers</li> <li><b>Purpose of PP:</b> Citizen information and receive opinions (EIA report; 1.3, not publicized)</li> </ul>	<ul style="list-style-type: none"> <li>Nine public hearings</li> <li>Citizens from 19 affected VDCs were invited</li> <li>Written project information given out in Nepali and English languages (SWEKO Norge AS 2009)</li> </ul>
<b>Review stage</b>	No information could be obtained	No PP is utilized	No PP is utilized
<b>Other remarks on the PP process</b>	No information could be obtained	<ul style="list-style-type: none"> <li>PP not utilized in other EIA stages</li> <li><b>Overall purpose of PP:</b> Involve public in decision making-related identification of impacts, mitigation and project alternatives (EIA report; 1.3, not publicized)</li> </ul>	PP not utilized in other EIA stages

PP Process as experienced by citizens (information from citizen interviews)			
	A3	UT	T3
<b>Scoping stage</b>	No PP experienced. (Arun Stakeholder Forum interview October 19, 2013)	No PP experienced. (Civil Society of Dolakha District interview November 28, 2013)	No PP experienced. (Local politician November 28, 2013)
<b>EIA report preparation stage</b>	<ul style="list-style-type: none"> <li>Public hearing only meant for PP. Announced on radio</li> <li>No public hearing in Num and Dobhan VDCs as citizens felt project was implemented behind their back</li> <li>Arun Stakeholder Forum memorandum issues: Transparency, compensation, displacement for minority groups. No proponent feedback on Memorandum (Arun Stakeholder Forum interview October 19, 2013)</li> </ul>	<ul style="list-style-type: none"> <li>Public hearings and informal meetings, where citizens were presented impacts and employment opportunities</li> <li>Citizens not allowed to speak</li> <li>No feedback received from 20-point demand memorandum from the Civil Society of Dolakha</li> <li>Citizens never received information in written form during informal meetings (Civil Society of Dolakha District interview November 28, 2013)</li> </ul>	<ul style="list-style-type: none"> <li>Public hearing was purely informative</li> <li>Citizen forum demand: 0.5 MW distributed to the local community. Reason for demand rooted in knowledge of implementation of Himal HP, where citizens are now dissatisfied with the compensation. Demand for 0.5 MW rejected by the proponent (Local politician November 28, 2013)</li> </ul>
<b>Review stage</b>	No PP experienced. (Arun Stakeholder Forum interview October 19, 2013)	No PP experienced. (Civil Society of Dolakha District interview November 28, 2013)	No PP experienced. (Local politician November 28, 2013)
<b>Other remarks on the PP process</b>	<ul style="list-style-type: none"> <li>Arun Stakeholder Forum visited the A3 proponent in Kandbari three times to learn about the extent of compensation and displacement, but could not get any answers</li> <li>Overall dissatisfaction with EIA process (Arun Stakeholder Forum interview October 19, 2013)</li> <li>Few, if any, people downstream are aware of present-day A3 (household surveys and focus group interviews October 20-22, 2013)</li> </ul>	<ul style="list-style-type: none"> <li>Civil Society of Dolakha District bypassed EIA proponent by handing in memorandum of demands directly to public officials. Issues: Transparency, corruption, compensation, mitigation (Appendix B)</li> <li>Civil Society of Dolakha District is quite capable of discussing compensation, resettlement and investment</li> <li>Overall dissatisfaction with EIA (Civil Society of Dolakha District interview November 28, 2013)</li> </ul>	<ul style="list-style-type: none"> <li>No citizens below the tailrace were aware of T3, despite living in what the simplified EIA report termed the Water Flow Fluctuation Stretch</li> <li>Local politician happy with the extent of information received. The opinion was that citizens were also not too opposed to the project</li> <li>Developed memorandum with demand for rural electricity. Not met by the proponent (local politician November 28, 2013)</li> </ul>

**Summary of PP processes in the three case studies:** Although the cases presented show disparities in PP practices, some key characteristics shared can be summarized as follows: (i) substantial discrepancies between the PP process as described by citizens and proponents, (ii) PP as experienced by citizens is restricted to public hearings or informal meetings during the EIA report preparation stage, (iii) public hearings and informal meetings are experienced as being non-consultative, (iv) according to proponents, the review stage is not utilized for PP (which it should according to EPR), and (v) citizens downstream of the tailrace of T3 and A3 did not participate in PP at all. The summary allows for a **preliminary conclusion** to be drawn. Although the practical implementation of the PP process differs slightly between cases, the implementation shows strong correlation with the nonparticipation category of the ‘Ladder of citizen participation’ of Arnstein (2004), which is often applied to programs encompassing the poor. Citizens participate once, through

a public hearing, where information is one-way from proponent to citizen, “guiding” citizens in the “right” direction. This PP approach resulted in insufficient consideration being given to the needs of citizens, which sparked the present contentious non-acceptance of the projects, articulated in terms of lack of transparency and manifested through the formation of the stakeholder forums with its formulated memoranda of demands.

## 7. IMPLICATIONS, ANALYSIS AND RECOMMENDATIONS

The recommendations are divided into an initial analysis followed by the actual recommendations. The analysis provides answers to the main questions: (i) why deficiency exists between the PP process as provisioned through the EPR, as executed by the proponent and experienced by citizens; and (ii) what the deficiencies imply in terms of decision-making processes.

### 7.1 Recommendations to Amend Environment Protection Rules

**EPR amendment for information disclosure during the scoping stage:** Despite UT and T3 proponents executing information dissemination and non-compulsory meetings during scoping, no citizens experienced such activities. As a local politician from Sahare professed, this discrepancy might be caused by the fact that newspapers are rarely sold in rural areas. Thus, information dissemination in the scoping stage does not reach citizens from small VDCs and villages (Local politician from Sahare VDC pers. comm. November 28, 2013). That no citizen experience was experienced during scoping meetings might have been caused by meetings being held in bigger villages/VDCs, less remote and less likely to suffer from the then dangerous 2001 revolution. Without PP during scoping, no knowledge was obtained on citizen socioeconomic conditions, wants or needs, which was the proponent-stated purpose for utilizing PP during the scoping stage in the UT and T3 cases. Therefore, a common deleterious outcome of the PP process in EIA among developing countries (see section 4.1) is repeating itself in the cases investigated. Socioeconomic factors, often attained through the scoping stage, are poorly understood, resulting in superficial and wrongful impact, mitigation and compensation prioritization, especially among the poorest of citizens. The consequences are immediate and evident, exemplified by the UT proponent being unaware of fishing communities existing in villages close to UT and that nine minority households (Tamang from Chutchut village) still need resettlement, thus “*living their life in a miserable way moving from one village to another*” (Civil Society of Dolakha District pers. comm. November 28, 2013). On the citizens part, the memoranda lists the consequences of the absence of PP during scoping (as well as the absence of PP during review). The memoranda demands revolve around mitigation and compensation needs, which, at the time of investigation, were not met. Civil Society of Dolakha District has already bypassed UT to hand in their memorandum of demands directly to journalists and government representatives (Appendix B). With strong government pressure for implementation of hydropower, it is questionable whether demands will be accommodated by UT or the government. NGOs would, at this point, be a strong actor to include. To the knowledge of this author, no such actors took part in the EIA.

*Recommendation:* Changing provisions in EPR from purely disclosing information through newspapers to also mandatorily encompassing news distribution facilities utilized in rural Nepal. Radio channels would in this regard prove efficient, as radio is a common way of attaining daily news in rural Nepal. It should be clear from the radio announcement which issues of the newspaper contain information on the project. Furthermore, places where people from various locations

meet (e.g., markets) should be identified, in order to provide information on scoping. Examples of methods that could be used include leaflets, pamphlets or public postings. Such amendment would not only positively affect citizen influence on decision making during scoping, but also positively affect public hearings. Here, the proponent knowledge base would be vastly improved, and citizens will be informed and prepared to take part in the meeting. Successfully implemented, the quality of PP, in terms of citizen influence, would improve from non-consultation to Tokenism where citizens are at least heard. This would be an initial step to more active participation.

**EPR amendment for mandatory public hearing guidelines:** Despite public hearings being utilized in all cases, citizens were far from satisfied with the degree to which they could voice their concerns. This is partly a consequence of the lack of provisions in EPR for the execution of public hearings, leaving it entirely up to proponents to choose means for PP. As noted above, the absence of PP in scoping further compromised the quality of the public hearings.

*Recommendations:* Since no clear provisions exist for mandatory public hearing guidelines in Nepal, an amendment to EPR is recommended, describing when and how citizens can participate. Such guidelines already exist, formulated by the Nepali government (DOED 2004). It is purely a matter of making these guidelines mandatory.

**Amending EPR to encompass publicity of the EIA report:** Neither the draft review report nor the final EIA report was published in all three cases. Subsequent inclusion through public hearings, information dissemination was absent, effectively leaving citizens unable to determine how their concerns were addressed in the report. Such non-participative PP, not uncommon in developing countries, puts citizens in a position without the slightest chance of influencing decision makers post- or pre-EIA process finalization. Another outcome from not publicizing the EIA was citizen uncertainty and the feeling of lack of transparency. Publication of the T3 summary EIA report, allowing citizens insight into EIA, had two effects: Citizens demanded more rural electrification; and citizens had comparatively positive attitudes toward the EIA process. No feelings of transparency issues were voiced by the local politician/citizen representative about T3.

*Recommendation:* The impacts of amending EPR to encompass publication of the EIA are twofold. First, it allows monitoring of mitigation and compensation set in the EIA. Second, publication benefits other government concerns by serving the Nepali national purpose of PP of “risk assurance”, by improving transparency in the PP process and avoiding critical narratives on HP development, detrimental to the overall national hydropower strategy. Publication of the EIA report could be made available online as well as in the biggest VDCs. These publications should be combined with radio and newspaper announcements.

## **7.2 Recommendations to Encourage the Proponent to Comply with Environment Protection Rules**

With a display of secretive behavior and unwillingness to obey national law, proponent compliance with PP regulations is a focal point for improvement in all three cases, especially in the A3 case. Sharing information proved difficult in the A3 case, illustrated by the Arun Stakeholder Forum visiting the A3 office three times without gaining knowledge on the extent of the reservoir (Arun Citizen Stakeholder pers. comm. October 19-22, 2013). Furthermore, the proponent was reluctant to disclose any information to the author of this report, despite numerous requests.

**Increasing the fine for violation of EPR:** According to section 4.1, EIA procedures without sanctions for noncompliance are often met with such in many developing countries in Asia. The

violation of EPR is punishable with a mere USD 500. A considerable increase in the fine would be an obvious legislative amendment for putting pressure on proponents to utilize PP in compliance with EPR. Comparison can be drawn to corporate environmental transactions, in which internalizing environmental costs have forced industries to think of new ways to minimize their impact on nature. The point being that raising the fine for violating EPR would not only force proponents to utilize PP in accordance with EPR, but would also allow such actors to reflect on ways in which the utilization of local knowledge can enhance decision making, by filling in information gaps and contesting their existing knowledge base as proposed in section 3.2. However, with citizens unaware of when EPR are breached, raising the fine for legislative breach will be insufficient to improve citizen influence on decision making.

*Recommendation:* Raising the fines for violation of EPR while also creating citizen awareness of EIA rights would create incentives for proponents to develop EIA processes according to EPR, serving the implementation of the HP strategy and the national stated purposes of PP: Offsetting conflicts, improving identification of mitigation measures and speeding up the development process.

**Introduce a licensing system for certified EIA practitioners:** Although social and environmental responsibilities of EIA consultancy companies are questionable, such companies depend on sound resumé, in which citizen opinions do count. Both T3 and UT had EIA consultancy companies executing their EIAs, while A3 did it themselves. Of the three cases, A3 had the most citizen opposition and the least amount of information dissemination. Few people, if any, downstream of A3, had been included in the EIA process (household surveys and focus group interviews, October 20-22, 2013). As these rural communities are some of the poorest in the region, living a life in isolation in remote areas, occasionally visiting bigger VDCs, they can easily be bypassed without consequences. A3 clearly confirms the tendency of EIA procedures in developing countries (section 4.1), where the poorest in society are often completely excluded from participating in EIA processes.

*Recommendation:* To ensure effective PP, introducing a licensing system for accredited independent EIA organizations, and hindering proponents themselves from executing the EIA, is a clear must.

## 8. CONCLUSION

Based on ‘in situ’ field investigations, this report elucidates and discusses several characteristics of the procedures for, and utilization of, Public Participation (PP) in Environmental Impact Assessment (EIA) in Nepal in relation to Hydropower Plants (HPs).

The information collected from the citizen interviews clearly indicate that citizens in all three case studies experienced a PP process deviant to EPR (see section 6.2). The citizens experienced PP purely through informative (not consultative) public hearings during the EIA report preparation. Citizens did not take part in any of the EIA stages wherein decision making takes place. Thus, citizens participated according to the Nonparticipation category of Arnstein’s ‘ladder of citizen participation’. Citizens are not aware of their PP rights and are effectively “guided” by proponents toward accepting the EIA process and final design of the HPs. On account of the absence of participation in decision-making processes, citizens from all cases developed memoranda of demands for more openness in the planning process, and the need for better mitigation and compensation measures. This, coupled with interviews and discussions with citizens, does show that citizens are capable of organizing themselves, articulating their concerns and pressing for PP implementation outside EIA procedures, underpinning proponents’ need for more shared decision making with citizens.



Recommendations for improving the PP process are essentially divided into amendments to legislation and improving the enforcement of these legislations. Proposed amendments are as follows:

- Amending EPR to include radio announcements during the scoping stage to make citizens aware of the project and allow them to submit their feedback (see section 7.1).
- Amendment for mandatory public hearing guidelines, forcing proponents to engage in discussions (consultations) with citizens (see section 7.1).
- Legislation making the publication of the EIA report mandatory, allows for post-evaluation processes whereby citizens can assess how their interests have been addressed (see section 7.1).
- Introduction of a licensing system for certified Nepali EIA practitioners, in order to prevent biased proponents developing EIA processes themselves (see section 7.2).
- Increasing the fines for violating EPR and creating citizen awareness of their EIA rights will put pressure on proponents to obey EIA legislations (see section 7.2).

Each case study had individual EIA contexts. The different HP proponents, and their individual purposes for utilizing PP, influenced the recommendations proposed. The government proponent from the Upper Tamakoshi case study implemented a PP process with more PP than corporate proponents from the other two case studies. The corporate proponents were less willing to enforce the EIA provisions in EPR and less willing to disclose project-specific information to citizens. This is a consequence of a valuation of trade-offs: citizen inclusion against decision making. Leaving citizens without information on the HPs and influence on decision-making processes contributed to their concerns and fostered opposition: the less inclusion, the more dissatisfaction (A3).

On the basis of these in-situ investigations, this report indicates that the PP-practice in EIA in Nepal in relation to HPs is executed top-down compared with international experiences. The minimum legislative requirements for PP, which ensures that citizens are heard and consulted, are not met because the enforcement of these requirements fails. Regulatory changes have to be made for improving the PP process in EIA. Incentives for complying with the EIA law need to be enforced. By doing so, a significant contribution would be made toward balancing the progress of the national HP development in Nepal against the interests and needs of local citizens impacted by these structures.

## **9. LIMITATIONS**

When dealing with plans, policies and projects, it is important to keep in mind that decision makers are not required to select the environmentally preferable alternatives or prohibit adverse environmental effects. Other policy considerations, such as social, economic, technical or national security interests, may be of higher priority (IAIA 1999). The recommendations proposed in this report need to be implemented in order to elevate the extent to which PP is utilized. It is believed (and put to use in this report) that the formulation of the national purposes for utilizing PP and the IFC PP policy, to some extent, favors implementation of the recommendations. However, as described in this report, today, PP is executed in a manner that deviates significantly from PP mentioned in IFC policies and as per national purposes of PP. The intention of this study was to propose recommendations. The implementation of such recommendations warrants further research.

Lastly, although NGOs should be involved in EIA in Nepal, no such actors were mentioned during field studies. It remains unclear as to whether NGOs were actually involved, since the question was never a focal point of this study. From the number of disputes between citizens and proponents, it is clear that there is a lack of understanding among citizens of their EIA rights, and uncertainty about project progress, and also that inclusion of NGOs would greatly improve citizen participation in EIA. The role of NGO involvement in the three cases is certainly an academic exercise worth pursuing.

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## APPENDICES

**Appendix A. Screening list to determine whether EIA is required for the construction of hydropower plants in Nepal. EIA is required, if one of the conditions below is satisfied (Nepal Law Commission 1997, Environmental Protection Rules, Schedule 2, p. 35).**

1.	If a forest patch above 5 ha will be cleared.
2.	Supply of electricity through the installation of transmission lines of more than 66 kV capacity.
3.	Operation of electricity generating projects with a capacity of more than 5 MW.
4.	Operation of more than 6 MVA rural electrification projects.
5.	Any water resources development activity which displaces more than 100 people with permanent residence.
6.	Inter-basin water transfer and use.
7.	Construction of multipurpose reservoirs.
8.	If protected areas are affected.
9.	If cultural heritage is affected.
10.	If construction is situated in: flood-prone areas, residential areas, areas with schools and hospitals, areas with main sources of water supply, environmentally weak and wet areas.
11.	Construction of more than 1 km long water tunnels.

**Appendix B. Memorandum of demands proposed by the Civil Society of Dolakha District addressed to the proponent of Upper Tamakoshi.**

Civil Society of Dolakha District and Federation of Nepalese Chambers of Commerce and Industry (FNCCI) along with the affected communities of the construction of the Upper Tamakoshi hydropower plant.

1. Make publicly available the expenses made by the corruption of one man and punish him.
2. Appointment of a project director according to the international standard as soon as possible.
3. The management of rural road, rural electrification, construction of school building and teaching materials in the most affected seven VDCs must be done immediately.
4. Financial support to the hospital that is constructed in Singati along with financial support to the ambulance as soon as possible.
5. Provide one vehicle to the Singati Police Office to maintain peace in the village.
6. Maintenance of health posts in the affected areas along with the procurement of medicine needed.
7. Construction of building for Pratap Smriti College, which is the only college of Dolakha District.
8. Appointment of agricultural technicians in the affected VDCs and provide financial support to agricultural production.
9. The army and police that are often threatening and swearing against poor citizen groups must be stopped. Also, site engineer, Mr. Bimal Gurung, who did not fulfil his social responsibility, must be transferred from the project straightway.
10. Provide income-generating and skill development training to males and females of the affected communities.
11. The community of Chyotchyot village of Lamabagar VDC, who were displaced after the construction of a road for the project, must be resettled.
12. Construction of a fence at the bank of the river to provide security to the villagers.
13. Safety and life insurance must be set up for the workers who get hurt while working on the project.
14. Provision of scholarships to the extraordinarily good students from ethnic and minority groups.
15. Black top roads to prevent dust.
16. Afforestation in the area where trees were destroyed while constructing the project.
17. Minimizing health problems and spread of diseases which are increased after the construction of the project due to the influx of new people.

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