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Alleviating Nepal's Poverty through Hydropower: India's Role in Scaling Up REDP project

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Abstract

Nepal has one of the highest hydropower potentials in the world with its theoretical potential estimated at 83,000 MW. If fully exploited, the energy can greatly ameliorate the country's environmental and poverty issues, subsequently transforming the country's economic and political position in its regional and bilateral relations. Despite nature's gift of bountiful water resources, Nepal only utilizes 600 MW of its economically feasible potential and remains as one of the poorest countries in the South Asian region.

In recent years, India began to inundate Nepal with foreign direct investment and economic packages to develop Nepal's hydropower potential. Several motivating factors led to such investment, two of which identified in this paper were to protect India's security and secondly, to meet its energy shortages and make available energy that can sustain India's desired economic growth. As a consequence, many India-Nepal hydropower projects to date are export-oriented rather than used to meet Nepal's domestic energy shortages. Amid these observations, it becomes important to examine the nature of India's investment influences on Nepal's economic development and thus its influences in alleviating Nepal's poverty through scaling up successful community-based hydropower projects.

UNDP's REDP project was chosen as an exemplary model and two of the five enablers for scaling up – governmental commitment and community mobilization - which UNDP identified in its feasibility study, formed the analytical framework of this paper. India has little positive influence on boosting governmental commitment, firstly because of Nepal's unstable political climate and secondly, for India's plausible desire to leave Nepal economically weak for geopolitical motivations. Meanwhile, previous projects reveal that there is little transparency between developers and affected communities, however with the increasing role of NGOs and the international community in the execution of Post-2015 Millennium Development Goals, it would only be advisable even imperative for India to mobilize communities and involve them in the process. While India may see a decrease in benefits due to the consequential enforcement of equal benefit sharing, communities would learn the value of hydropower which would reduce development impediments affiliated with lack of public acceptance.

UNDP's Report "Scaling Up Decentralized Energy Services in Nepal" formed the premise of this paper. Information relayed in interviews with professionals in water governance and investment in developing countries guided the content development of this paper. Information and data from ILO, UNCTAD and UNDP as well as news media and analytical reports on India's latest hydropower investment were incorporated in the paper. Various research papers helped to provide theories and analytical frameworks.

This research only serves as a preliminary overview and hopes to bring to attention firstly the frustrating situation of Nepal's current poverty and unrealized



hydropower solution secondly the true nature of Indian investment and the geopolitical complexities in this situation, and thirdly to realize how powerful one economic sector - hydropower - can be for Nepal to eradicate poverty and meet the Millennium Development Goals. Future research should incorporate a more thorough multidimensional analysis, including further analysis in additional case studies, cross-national comparisons, the three other enablers for scaling up and the geopolitical and cultural complexities.

Abbreviation List

ADB	Asian Development Bank
AEPC	Alternative Energy Promotion Centre
BOOT	Build Own Operate and Transfer
DDC	District Development Committee
DFID	Department for International Development
GDP	Gross Domestic Product
ILO	International Labor Organization
MDG	Millennium Development Goals
MW	Megawatts
NGO	Non-governmental organizations
REDP	Rural Energy Development Programme
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
VDC	Village Development Committee

Preface

Graced with bountiful water resources, Nepal possesses an enormous hydropower potential which could meet its domestic energy demands and also produce enough energy to export. Despite its resource advantages and the development of several hydropower projects, it is astounding how only 40% of its population have access to electricity and how Nepal still remains as one of the poorest countries in the South Asian region today. As part of the strident foreign policies led by the newly elected Prime Minister Narendra Modi, India is proposing huge economic packages to aid Nepal in its hydropower development. Investment and aid packages are undeniably important at the beginning however, quality – the implementation of hydropower projects, its utilitarian benefits and its successes in poverty eradication – becomes crucial later in the development process. This paper hopes to uncover the influence of India’s foreign direct investment on Nepal, highlight the features which India-Nepal cooperation can draw from UNDP’s successful Renewable Energy Development Project (REDP), but more importantly for Nepal to realize the potential of its hydropower to achieve the Millennium Development Goals.

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Introduction

Nepal is a landlocked country between India and China, nestled within the steep mountain ranges of the Himalayas and benefiting from an abundance of water resources. The country has 83,000 MW theoretical hydropower potential with 42,000 MW that is economically feasible. However Nepal has only developed 600 MW where 98% of the energy potential has not been realized¹.

Despite the immense hydropower potential, Nepal's per capita gross domestic product (GDP) remains the lowest in the South Asian region. In 2000 prices, Nepal's per capita GDP was estimated at \$243, which was where India and Bhutan were in 1980. While the poverty headcount ratio at USD\$1.25 a day has decreased from 53.13% in 2003 to 24.82% in 2010², Nepal's Human Development Index is 0.428, ranked 157th of 187 countries, 85% of the population live in rural areas, around 25% of its population still live under the poverty line³ and the Gini coefficient of inequality has increased⁴.

It becomes intriguing why Nepal remains impoverished despite its abundant water resources. Investment in hydropower may prove to be a solution towards Nepal's socio-economic conditions and poverty. Hydropower development moves the country towards a Green Economy, "an economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities"⁵. Better use of natural resources and accessibility to energy addresses the Water Energy and Food Security Nexus⁶, improving health and productivity of the bottom billion thus lifting them out of poverty. Electricity from hydropower only accounts for 1% while energy is derived from other sources such as wood, agricultural waste and animal dung⁷. Hydropower can reduce reliance on the latter which reduces exposure to smoke and low quality fuels, improving health, proper nutrition and children's education. Furthermore, hydropower can address the frequent electricity shortages⁸ which are an impediment to Nepal's economic development. Studies indicate that a 8% economic growth rate is necessary to eradicate absolute poverty in households and no other sector of economy than

¹ Meeking, Lincoln. 2013. *The Battery of South Asia? The Potential for India-Nepal Hydropower Cooperation*, Dalkeith, Future Directions International Pty Ltd

² World Bank

³ Kim, Chanmi, 2011, *Scaling Up Decentralized Energy Services in Nepal*, United Nations Development Programme, pp. 3.

⁴ World Bank

⁵ Hoff, H, 2011, *Understanding the Nexus. Background Paper for the Bonn2011 Conference: The Water, Energy and Food Security Nexus*. Stockholm Environment Institute, Stockholm.

⁶ Hoff, H, 2011, *Understanding the Nexus. Background Paper for the Bonn2011 Conference: The Water, Energy and Food Security Nexus*. Stockholm Environment Institute, Stockholm.

⁷ Meeking, Lincoln. 2013. *The Battery of South Asia? The Potential for India-Nepal Hydropower Cooperation*, Dalkeith, Future Directions International Pty Ltd, pp. 2

⁸ Kasahara, S, 2014, Personal Interview.

hydropower would be able to achieve this, if it reaches the required quantum of more than 25,000 MW by 2027⁹.

Recently, there has been an increase in India-Nepal hydropower projects. India is now Nepal's biggest partner and Nepal encourages more Indian investments in its hydropower projects¹⁰. However, the presence of aid does not necessarily translate to effective measures and in some cases, may lead to reversed outcomes on initial benevolent intentions. Secondly, the effects of investment may also differ too. India's support to the Bhutanese government in its hydropower development (Chuka project) had enhanced the Bhutanese economy significantly, doubling its per capita GDP¹¹. Yet despite India's investment, Nepal still lags behind India and Bhutan in its hydropower development which can be explained by various features such as confusions in hydropower policy, underdeveloped infrastructure and lack of funds.

In light of the above, this paper will provide a preliminary analysis of the influence which India's investment on hydropower has on alleviating Nepal's poverty by investigating the geopolitical dynamics in whether the investment is beneficial or an impediment to Nepal's development and the recommended factors which should be considered as India and Nepal scale up similar poverty alleviation programs to UNDP's Renewable Energy Development Project (REDP). In 1996, UNDP launched the REDP project to promote the development of micro-hydropower projects in rural communities. The project was extremely successful, increasing average annual household incomes by USD\$121 (8%) and led electrified households to spend twice as much on education than non-electrified households¹².

Currently, India-Nepal hydropower projects operate on a "Build Own Operate and Transfer" (BOOT) system where management rights are transferred back to Nepal after certain years for export of energy to India. Although jobs are created, certain individuals gain skills to bring back to their communities and some do benefit from electricity thus gaining more access to food, however hydropower projects are capital-intensive and employment is only temporary, which therefore suggests a need for more long-term, sustainable solutions to poverty alleviation through hydropower.

Currently, many bilateral hydropower projects are export-oriented yet few are driven towards poverty alleviation. The REDP project was chosen in this paper as its successful results make it an exemplary model for hydropower development and poverty alleviation. This research hopes to expand UNDP's REDP feasibility study¹³

⁹ Karmacharya, J.L., 2007, Maximizing Benefits from Hydropower: A Nepal Case, *Hydro Nepal: Journal of Water, Energy and Environment*, Vol 1 (2007)

¹⁰ Patnaik, S., 2014, *Investment in hydropower projects welcome*, The Hindu.

¹¹ Independent Power Producers' Association Nepal Confederation of Indian Industry, 2006, *Nepal India Cooperation on Hydropower (NICOH)*, Independent Power Producers' Association Nepal Confederation of Indian Industry, pp. 39

¹² Kim, Chanmi, 2011, *Scaling Up Decentralized Energy Services in Nepal*, United Nations Development Programme.

¹³ Kim, Chanmi, 2011, *Scaling Up Decentralized Energy Services in Nepal*, United Nations Development Programme.

of scaling up its projects in the context of India's influence, and examine how the identified enablers¹⁴ operate in the context of India's investment into Nepal's hydropower. While there is increasing conversation on how hydropower can boost Nepal's economic development, more attention is needed to examine how hydropower addresses poverty alleviation and secondly the geopolitical dynamics and influences of India's hydropower investment on Nepal's development.

Research Methodology

Primary sources for this research come from interviews and discussions with various professionals in the field of water, investment, procurement and development. The interviews helped to create a multidimensional analysis of the issue and subsequently, the underlying framework of this research paper. Economic measures such as per capita GDP and poverty headcount ratio were obtained from the World Bank as well as investment reports from UNCTAD and ILO's analysis of Nepal's critical development constraints. Perspectives from various research papers on Nepal's hydropower potential, and hydropower sustainable development between India and Nepal were also incorporated. Papers on good governance and Nepal's political climate guided the theoretical analysis. With the ascent of a new Indian Prime Minister, news reports and online articles from famous news agencies such as The Hindu and The Diplomat as well as NGOs such as The Asia Foundation to identify the latest progress and dynamics in India's hydropower investment in Nepal.

¹⁴ Shared financing, capacity development at all levels, effective partnerships and coordination, national ownership and commitment and community mobilization

Geopolitical analysis: India's Interest in Nepal

Aforementioned, Nepal is a landlocked country and operates as a buffer zone – “a yam between two boulders whose continued existence depended on harmony between its giant neighbors”¹⁵¹⁶ of India and China (Figure 1).



Figure 1

In May 2011, the China Three Gorges Corporation decided to develop the 1.6 billion dollar¹⁷ West Seti Dam project in conjunction with other Chinese banks and Indian firms. It is expected to be the highest Concrete Faced Rock Filled dam in the world at a height of 195 meters¹⁸. 90% of the generated energy will be exported to India through a 230 kilometer transmission line¹⁹. On July 2014, India's new Prime Minister announced huge economic package to assist Nepal in the development of its hydropower projects.

Hydropower investment is one of the strategies in India and China's geopolitical conflicts. Since the lost of Tibet as its buffer territory, China wishes to maintain good relations with Nepal firstly to control unrest in Tibet and secondly, to gain access to India's economic market.

Meanwhile, India sees Nepal as assurance of its security. In 1950, Nepal and India signed the Indo-Nepal Treaty of Peace and Friendship to establish a close strategic relationship. However, Sino-Nepalese tensions began to grow as China began to invest and sell arms to Nepal. China claimed its intention was “to increase

¹⁵ Garver, J.W., 1991, China-India Rivalry in Nepal: The Clash over Chinese Arms Sales, *Asian Survey*, Vol. 31, No 10, pp. 957

¹⁶ Nepal's adopts the Five Principles of Peaceful Existence for its foreign policy as a strategy of its survival.

¹⁷ Kasahara, S., 2014, Personal Interview

¹⁸ Environmental Justice Atlas. West Seti Hydroelectric Project, Nepal. Environmental Justice Atlas. Retrieved from <http://ejatlas.org/conflict/west-seti-hydroelectric-project-nepal> [July 2014]

¹⁹ International Rivers, *West Seti Dam*, Nepal. Berkeley, International Rivers. Retrieved from <http://www.internationalrivers.org/campaigns/west-seti-dam-nepal-0> [July 2014]

the defensive capability and ensure the security of friendly countries”²⁰ though it is uncertain whether this was China’s strategic move “to strengthen India’s neighbors to resist Indian paramourcy”²¹. When India lost to China in the 1962 Sino-Indian War over territorial and border disputes, India has ever since felt its security was at stake with China’s growing power, in light of the idea that territorial expansion leads to increase in political power.

Furthermore, India is also a country with the most water conflicts and also faces water shortages²². With India’s aspirations to grow at 8% per annum, energy is needed to sustain and move its economic growth while meeting its growing energy demand²³. With increasing instability in Iraq and the ISIS group as well as India’s huge dependence on foreign oil (85% of what it consumes is imported)²⁴, India is even more desperate to diversify its energy sources for the sake of its economic security.

Hydropower investment in Nepal is India’s strategy to not only manage its energy security and acquire energy needed to buttress its growth aspirations, but also to defend its security from China’s rising power.

Literature Review: Rural Energy Development Project

In 1996, UNDP launched a small pilot initiative in five remote hill districts to promote the development of micro-hydropower projects and improved cooking stoves to isolated, rural communities through decentralized, off-grid approaches. The project operated in two phases. In Phase I (REDP I), the project supported 100 Village Development Committees (VDCs) in the provision of 1,524 solar home systems, 2,953 toilet attached biogas plants, 7,200 improved cooking stoves (ICS) and 120 micro hydro schemes, benefitting more than 10,000 rural households with new access to electricity by 2003. The successes of REDP I led to REDP II, where the World Bank joined as a partner organization to provide financial assistance in the expansion of the project to an additional 10 districts. This brought the total number of districts to 25, which covered more than one third of the total number of districts in the country.

²⁰ Garver, J.W., 1991, China-India Rivalry in Nepal: The Clash over Chinese Arms Sales, *Asian Survey*, Vol. 31, No 10, pp. 962

²¹ Ibid

²² Salim, N. 2014, Personal Interview.

²³ Independent Power Producers’ Association Nepal Confederation of Indian Industry, 2006, *Nepal India Cooperation on Hydropower (NICOH)*, Independent Power Producers’ Association Nepal Confederation of Indian Industry, pp. 10

²⁴ A.R., 2014, *Learning on the Job: India and Iraq*, Delhi, The Economist. Retrieved from <http://www.economist.com/blogs/banyan/2014/07/india-and-iraq> [July 2014]

By 2006, the program had connected 59, 172 households to micro-hydro and had installed 317 new micro-hydro plants and 5,747.2 KW of micro-hydro capacity.

The project was successful in its impressive capabilities to address several Millennium Development Goals. Hydropower development led to reduced dependence on firewood and kerosene, preserving the environment and improving child and maternity health. Availability of electricity also promoted income generation activities, increasing school enrollment rates (average boys/girls ratio of school enrollment decreased from 1.20 to 1.13) and women's participation in community and political decision-making processes. Household income had also increased by US\$121, and average yearly household income in newly electrified communities was US\$1,530, which was US\$136 higher than the average US\$1,213 in similar communities without electricity.

Much discussion has occurred in examining the feasibility of scaling up REDP and similar effective hydropower programs. UNDP's feasibility study identified five key enablers in scaling up such projects: shared financing, capacity development at all levels, effective partnerships and coordination, national ownership and commitment and community mobilization. In light of India's recently growing investment in Nepal, this research paper will examine the latter two enablers in the context of India's influence to identify how these should be considered and addressed when scaling up similar REDP projects.

Government Will

Nepal's 10th Five Year Plan (2002 – 2007) indicated its aims to “implement bilateral and regional cooperation in the development of hydroelectricity...to accelerate both the national and regional economic development of Nepal”²⁵ and to reduce poverty and backwardness²⁶. The primary goal of the Plan was poverty alleviation with aims to reduce the rate from 42% to less than 30%²⁷. Despite the optimism in the 10th Five Year Plan in its review of achievements in its 9th Five Year Plan, the country had fallen short of its hydropower installed target capacity (538 MW target compared to the achieved 527.5 MW)²⁸. Nepal remains slow in its development of hydropower compared to other South Asian countries as evinced in the example aforementioned in the introduction.

Despite the REDP project received substantial governmental support through establishment of a dedicated national agency, AEPC to lead and coordinate rural energy programs, Nepal lacks the same political commitment to do so in its other

²⁵ National Planning Commission, 2002, *Tenth Plan (2002-2007)*, Kathmandu: Government of Nepal. pp. 289

²⁶ Ibid, 290

²⁷ Agrawala, S., et al, 2003, *Development and Climate Change in Nepal: Focus on Water Resources and Hydropower*, OECD.

²⁸ 290

hydropower projects²⁹. The country often finds itself in a tongue-in-cheek situation, where it acknowledges its political climate deters investors but little change has been achieved.

Political Climate

Since the civil war, Nepal has encountered Maoist insurgencies and currently faces challenges with its slow transition from a kingdom to a republic³⁰. Maoists who oppose foreign investment are often against Indian investment in hydropower projects³¹. The government also has little incentive to address its domestic energy shortages due to weak domestic infrastructure and higher transmission costs compared to exporting to India over the border, which leads to lower prioritization of addressing domestic shortages over energy exports³². Finally, the Nepalese government has less incentive to address poverty firstly because those in the bureaucracy are often of higher caste, and secondly, for its corrupt system. Most of the money from foreign aid often has often “been used to produce a massive expansion in the bureaucracy, a ‘combination of rural neglect with massive redistribution of State revenues in the form of salaries and rents to governmental officials and offices in urban areas’”³³. Difficulties in establishing a solid constitution^{34,35} also reveals a lack of national unity which deters foreign investors.

Culturally, Nepal’s political climate is derived from two features in Nepalese culture. Firstly, time is seen as a river, circular rather than progressive with no sense of the past, present and future. Time is therefore not seen as a commodity and rarely is there the idea that time can be squandered. Timelessness is incorporated into modern bureaucratic methods. With the absence of a strong sense of future, there is no savings or investment, which increases dependency on foreign investment³⁶. Secondly, under the pressure of western models, Nepali individualism becomes egoistical which instills a lack of sense of duty and responsibility³⁷. As a consequence, those at higher positions fail to acquire a sense of duty to society which has consequently brewed the government’s ongoing issues of corruption and ineffectiveness.

²⁹ Kim, Chanmi, 2011, *Scaling Up Decentralized Energy Services in Nepal*, United Nations Development Programme, pp 7

³⁰ ADB; DFID; ILO; 2009, *Nepal: Critical Development Constraints*, ADB, DFID, ILO, pp. 7

³¹ Indo Asian News Service, 2014, Nepal Maoist party opposes Indian investment in hydropower sector, Yahoo News. Retrieved from: <https://in.news.yahoo.com/nepal-maoist-party-opposes-indian-investment-hydropower-sector-143605676.html> [July 2014]

³² Kasahara, S, 2014, Personal Interview

³³ Hutt, M., 1994, Fatalism and Development in Nepal, *Nepal in the Nineties*, New Delhi, Oxford University Press, pp. 122

³⁴ Kasahara, S, 2014, Personal Interview

³⁵ Adkin, R, 2014, Nepal Tries Again to Write a Constitution, Kathmandu, The Diplomat. Retrieved from <http://thediplomat.com/2014/03/nepal-tries-again-to-write-a-constitution/> [July 2014]

³⁶ Hutt, M., 1994, Fatalism and Development in Nepal, *Nepal in the Nineties*, New Delhi, Oxford University Press, pp. 122

³⁷ Ibid

India's Ideal Role: Reorientation of Goals

With Nepal's unstable political economy, India does have the capability of influencing governmental will through its foreign direct investment. Investors may find that aid sent to countries with corrupt, unaccountable regimes is less effective than those with transparent governments that aim to achieve economic growth and poverty reduction³⁸. One criticism of foreign aid is that programs tend to be geared towards donors rather than driven towards the recipient's priorities³⁹ however this limitation can be idealistically utilized by the Indian government if it reoriented its goals for Nepal's benefit. Currently, Nepal is drawn into India's aims of exporting energy and thus giving lower priority to poverty alleviation, yet should India reorient its trade goals towards the latter – capacity development, infrastructure development and poverty alleviation – Nepal would follow suit and may demonstrate political commitment.

Geopolitical Reality behind the Optimism

Despite the long-term benefits which India would gain from Nepal's poverty alleviation, it is outweighed by its geopolitical strategy therefore resting the responsibility of influencing governmental will on the non-governmental organizations (NGOs) and the international community. In light of the historical and geopolitical dynamics between India and Nepal, it may seem as though India wishes for Nepal to remain stagnant in its economic development for easier dominance of the weaker, landlocked country. Economic development creates power thus India cannot afford to risk consequential changes in power dynamics for fear of future threats from China through a stronger Nepal.

Studies suggested that Nepal's development is constrained by India⁴⁰. One of the reasons is dependency theory, denoted as underdevelopment which is “a consequence of the incorporation of a pre-capitalist system in the global capitalist system dominated by ‘Western’ economies and ‘Western powers’⁴¹. In Nepal's context, the country suffers from a partial incorporation of semi-colony of the British Raj as well as India's political economy.

Fatalism and hierarchy which are deeply ingrained within Nepal's Bahunistic culture influence the impact of foreign aid by increasing the sense of powerlessness

³⁸ Brown, O. (2007). Promoting Good Governance Through Trade and Aid: Instruments of Coercion or Vehicles of Communication? In H. Brown, P. Moreno, & Winkler (Eds.). *Trade, Aid and Security*, London: Earthscan, pp. 84

³⁹ Ibid, pp. 82

⁴⁰ Hutt, M., 1994, Fatalism and Development in Nepal, *Nepal in the Nineties*, New Delhi, Oxford University Press, pp. 113

⁴¹ Ibid

and dependency. As a consequence, foreign aid donors adopt a paternal role and “the only active agent of development becomes the foreign party”⁴².

Ideally, if India were to prioritize economic incentives over geopolitical, the plethora of foreign direct investment should be directed towards capacity building and infrastructure development to establish solid foundations upon which Nepal’s hydropower can flourish. Yet again, it may be unsurprising if Nepal’s over-dependence on India’s foreign direct investment on hydropower projects exclusively may be part of India’s geopolitical strategy to retain control over Nepal. Despite India’s investment to develop Nepal’s energy sector, one might wonder if it erodes Nepal’s environmental security as a consequence of over-dependence on aid.

Often times, governments like Nepal fail to recognize the authority they have and their ability to negotiate⁴³. As India floods new investment into Nepal, Nepal should battle its sense of powerlessness and retrieve its negotiating power in the delicate, investment process. The Nepalese government should strive for lateral cooperation as it had with UNDP and World Bank for the REDP project, rather than a vertical father-child relationship it currently possess with India. Not only does this rest within the government’s responsibility through addressing its insecure political climate, but the international community too can influence the Nepalese government to recognize the benefits and importance of poverty alleviation through hydropower development.

Transparency

Undoubtedly, governmental change is a long, tedious process which the country cannot afford to wait longer for its rectification before poverty alleviating hydropower projects are implemented. One realistic way through which such projects can be implemented without placing India’s geopolitical incentives too much at risk, is enforcing transparency, thus alleviating poverty at local levels.

One of the fundamental reasons to REDP’s successes was its decentralized, community-based management approach. The program operated upon the four pillars of participation, transparency, consensus decision and inclusion, placing local community participation at the centre of each development process. Communities were empowered to partake in the decision-making, benefits sharing and sustainability of the process. Emphasis was placed on building upon, rather than establishing, existing governance structures at the local level, through Village Development Committees (VDCs) and at district level, District Development Committees (DDCs).

Currently, there is a lack of transparency and consultation in the hydropower planning and procurement process especially at the bureaucratic level. In 2007, a

⁴² Ibid, pp 119

⁴³ Turley, L., 2014, Personal Interview.

report from the Japan Center for a Sustainable Environment and Security revealed several violations in the resettlement program of the West Seti Hydroelectric Project, including deception of people's consent and violation of the Asian Development Bank (ADB) safeguard policies in information disclosure⁴⁴. Furthermore, a majority of the people threatened by relocation were of lower Hindu caste⁴⁵.

Community engagement in deciding benefits sharing can help better tailor the uses of hydropower towards local needs that even the most comprehensive feasibility and needs study may fail to cover. Hydropower projects produce monetary and non-monetary benefits. Monetary benefits include taxes, compensation and royalties while non-monetary benefits are community development programs and infrastructure development for catchment areas⁴⁶.

Royalty is the rent which project developers pay to the government for the resources being used. Nepal's Hydropower Policy 2001 has devised two royalty rates for hydropower projects that produce electricity for domestic consumption and export purposes respectively, where 12% of the royalty will be distributed to the district of the hydropower project⁴⁷. The 1999 Local Self Governance Act and Regulations advise how royalties received by VDCs and DDCs should be used however affected areas that are not represented on the DDCs may see funds redirected to other areas. Despite the outstanding necessity to distribute royalties to people most affected by the projects, the funds are sometimes redistributed elsewhere or divided among other affected areas plausibly of lower priority. It is for this reason that friction exists between the affected families and developers as the former "have unanimously expressed the view that hydro royalty should be directly invested in the affected VDCs and for the benefit of affected families"⁴⁸. Currently, there is a lack of transparency in royalty distribution and its expenditure which creates hindrances in effective implementation⁴⁹. DDCs and VDCs should embrace greater representation of affected and underprivileged communities within its committee to ensure a more adequate distribution however what is more important, albeit too idealistic to achieve, is the aforementioned change of the political climate.

Community engagement in terms of non-monetary benefits sharing is more feasible as it mirrors REDP's approach in building upon existing governmental

⁴⁴International Rivers, *Report on West Seti Hydroelectric Project and ADB Policy Violation*, Berkeley, International Rivers. Retrieved from <http://www.internationalrivers.org/resources/report-on-west-seti-hydroelectric-project-and-adb-policy-violations-2565> [July 2014]

⁴⁵ International Rivers, *West Seti Dam*, Nepal. Berkeley, International Rivers. Retrieved from <http://www.internationalrivers.org/campaigns/west-seti-dam-nepal-0> [July 2014]

⁴⁶ Turley, L. 2014, Personal Interview.

⁴⁷ Mathema A. et al, 2013, *Can hydropower drive green economy for Nepal: A Review*, Kathmandu, Asian Centre for Environment and Sustainable Development, pp. 10

⁴⁸ Mathema A. et al, 2013, *Can hydropower drive green economy for Nepal: A Review*, Kathmandu, Asian Centre for Environment and Sustainable Development, pp. 10

⁴⁹ Saciwaters, Hydropower Stakeholder Consultation Workshop, Gantok. Retrieved from <http://www.saciwaters.org/hydropower/stakeholder-workshop.html> [July 2014]

structures with minimal change to the political climate. Indian developers benefit from community participation as previous projects revealed that lack of public acceptance towards hydropower projects was a major impediment in the implementation process. Developers would be able to understand and recognize the issues that communities would face, but similarly, this two-way dialogue educated communities on the *value* of hydropower projects which to date, not all recognized⁵⁰. Social and environmental costs would be diminished as communities would be able to “make an informed contribution on issues such as identification, planning and distribution of benefits and potential settlement options”⁵¹. Issues of gender discrimination, caste discrimination and socio-economic stratification at the committee and village level were identified at community-based micro-hydropower projects⁵² thus should be considered and addressed to ensure full, equal and diverse representation in the community engagement process.

Transparency not only rests on community engagement but also the increasing recommended involvement of non-governmental organizations (NGOs)⁵³, think tanks and the international community^{54,55}. As Indian developers expand into Nepal, they should engage in more evidence-based actions with think tanks as evidence generation is currently underappreciated for its cost and time commitment in Nepal’s hydropower’s policy and development planning⁵⁶. Meanwhile, NGOs are able to enforce transparency in the consultation process as well as educating local communities the value of hydropower projects. Collaboration between developers, NGOs and communities would become critical albeit India’s geopolitical intentions as NGOs are to adopt a greater role in the execution of Post-2015 Millennium Development Goals (MDGs)⁵⁷.

The power of the international community should not be underestimated as it is them who will monitor and enforce water integrity⁵⁸, the euphemistic term for governmental corruption which may inhibit equal benefits and resource sharing.

⁵⁰ Salim, N., 2014, Personal Interview.

⁵¹ Hydropower Sustainability Assessment Protocol, Community Engagement & Acceptance. International Hydropower Association. Retrieved from [http://www.hydrosustainability.org/About-Sustainability/Social/Community-engagement---acceptance-\(1\).aspx#.U8ZwZvmSwrV](http://www.hydrosustainability.org/About-Sustainability/Social/Community-engagement---acceptance-(1).aspx#.U8ZwZvmSwrV) [July 2014]

⁵² Upadhayay, S., 2009, *Evaluating the effectiveness of micro-hydropower projects in Nepal*, Master’s Theses Paper 3701, USA, San Jose State University

⁵³ Salim, N. 2014, Personal Interview

⁵⁴ Myshlovska, O., 2014, Personal Interview

⁵⁵ Turley, L., 2014, Personal Interview

⁵⁶ Manandhar, M. Prasai, S. and Varughese G., 2013, Using Better Evidence to Reform Nepal’s Hydropower Policy, Asia Foundation. Retrieved from <http://asiafoundation.org/in-asia/2013/12/11/using-better-evidence-to-reform-nepals-hydropower-policy/> [July 2014]

⁵⁷ Salim, N. 2014, Personal Interview

⁵⁸ Salim, N., 2014, Personal Interview

Conclusion

The brief geopolitical analysis in this paper highlights that India's hydropower investment in Nepal is to access energy that can deal with the country's energy shortages, support its economic growth but also to defend its territorial security as China rises in power. The REDP project suggested five enablers to scale up similar hydropower projects that alleviate poverty, of which two (government will and effective cooperation through transparency) were examined in the context of India in this paper.

India may be conflicted in its geopolitical goals to boost Nepal's government will which is necessary for the sustainability of scaled up REDP projects. Furthermore, cultural aspects of the government's inefficiency simply cannot be addressed without a long and tedious transformation. Yet with the increasing role of NGOs in the Post-2015 Millennium Development Goals, the increasing influence of the international community and the benefits gained from community involvement, India can enhance the transparency of its planning and decision-making processes in the hydropower projects for communities to voice out their concerns and opinions on benefit-sharing.

Amid the complexity and diversity of issues in this topic, this study therefore only serves as an overview and preliminary analysis of how India can alleviate poverty in Nepal through its hydropower investment in Nepal, as well as evaluation of certain enablers of scaled up REDP projects in the context of India and Nepal. A deeper analysis of this research should it be pursued, should further examine whether India constrains Nepal's development, how it can be addressed, examine historical case studies where India's investment in Nepal may have alleviated poverty, cross-compare between the effects of India's hydropower investment in Bhutan and Nepal, further analyze the political and cultural complexities of Nepal's government through which international and non-governmental organizations can devise strategies to boost national commitment towards hydropower, and cultural impediments, if any, in this process.

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