

Tanahu Hydropower Limited

SUPPLEMENTARY ENVIRONMENTAL IMPACT ASSESSMENT (S-EIA)

of

TANAHU HYDROPOWER PROJECT



Submitted to

**Ministry of Population and Environment
Singhadurbar, Kathmandu**

Through

**Department of Electricity Development
and
Ministry of Energy**

Prepared and Submitted by

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Executive Summary

E.1 Introduction

The Environmental Impact Assessment (EIA) of 127MW Tanahu Hydropower Project. Initially Upper Seti Hydropower Project) was carried out by Environment and Social Studies Department (ESSD) of Nepal Electricity Authority (NEA) and approved by the then Ministry of Environment on 2066/07/05 BS.

The capacity of the Tanahu Hydropower Project (THP) was increased from 127MW to 140MW. This change is mainly due to the increase in the efficiency of the turbine output. While comparing the final project layout and capacity with the previous one as per approved EIA, there is no change in the zone (Gandaki) or district level (Tanahu) of location of the project. It lies in province 4 after restructure of local bodies. In case of VDC, Sabung Bhagawatipur is added as project affected VDC whereas Pokhari Bhanjyang VDC merged into Vyas Municipality-13. ESSD is responsible for the preparation of Supplementary EIA Report for Tanahu Hydropower Project.

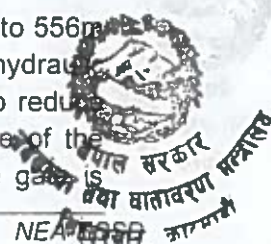
Due to the change in the project layout and mainly the installed capacity, there are expected changes in the environment (physical, biological and social). Some changes were observed in the community forests when final tree census/numbering was carried out in the reservoir area and project facilities sites. The total number of trees of community forests decreased while comparing with the approved EIA report. In such circumstances, it was necessary to carry out this supplementary EIA for the THP as directed by the EPR, 2054 (Fifth Amendment).

E.2 Project Description

The Tanahu Hydropower Project (THP) with a dam height of 140m and installed capacity of 140MW is located in the Tanahu District. A feasibility study was conducted by NEA and completed in July 2001. This is a storage type hydroelectric project. This storage project involves the following components: 140m concrete gravity dam with the Full Supply Level at an elevation of 415 masl, 7.26 sq.km surface area of the reservoir with gross storage capacity of 295.1MCM, a single tower type intake, 175m long penstock, an underground powerhouse consisting of 2 x 70MW Francis Turbines. The 6km access road from the Prithiv Highway connects to the left and right bank of the dam site whereas another 4.4km road connects to the powerhouse site from the newly constructed RCC Bridge on the Seti River.

The project is located closer to the semi-urban area, Pokhara which is just 40km away from the project site. The dam site of the project is located near Damauli Bazaar at Vyas Municipality and Kahu Shivapur VDC on the left and right banks of the Seti River, respectively. The reservoir extends to Vyas Municipality, Kahu Shivpur, Jamune, Rising Ranipokhari, Kot Durbar, Chhang, Sabung Bhagawatipur, Majhkot and Bhimad VDCs. The powerhouse is located at Vyas Municipality and Kahu Shivpur VDC.

The length of the both the diversion tunnel has decreased from 712m 1st, 881m 2nd to 556m 1st, 622m 2nd. The dam gate and spillway design has been modified, based on hydraulic modelling. Gate design now reflects the reduction from six gates to three gates, to reduce the distance between the retaining walls (i.e. to prevent overtopping) at the base of the spillway, with each gate increased in size to 16.5m width by 18.1m height. One gate is



located on the left bank side and two on the right bank side. A 7.4 m diameter and 1162m headrace tunnel (Approved EIA, 7.8m diameter and 927m long) will be constructed on the right bank. A 175m long penstock that divides into two (going from 7.4m in diameter to 2x3.1m diameter) near its end is redesigned after changing from a 7.8m diameter, 195m long penstock. After optimization of 3.7m diameter at orifice and 17m diameter at chamber a headrace surge tank with 3.6m diameter at orifice and 18m diameter at chamber will be used.

E.3 Study Methodology

The S-EIA process follows the Environmental Protection Rules, 2054 (Fifth Amendment), Environmental Protection Act, 2053 and National EIA Guidelines, 1993. This S-EIA is prepared in accordance with the legal requirements of GoN, based on field studies and consultation with the local people and officials.

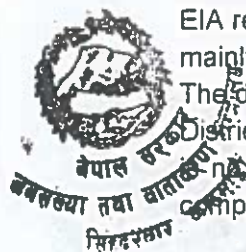
In case of vegetation study, unlike the approved EIA, the census data obtained from the tree numbering/counting of the community forests of the reservoir area was used. This, in fact, gave the precise number of the trees to be removed from the community forests in the reservoir for the project construction. Other methods adopted were field studies and public discussions.

A public hearing was conducted at the project site. A public notice was published on the local newspaper seeking the participation of stakeholders in a public hearing program for obtaining their opinion and suggestions regarding the outcomes of the SEIA of the THP. The overall study methodology was guided by the EPR, 2054 (Fifth Amendment). The methodology for the S-EIA mainly relied on the desk study. Since, there was no change in the project location or design and it was simply because of increased efficiency of turbine output, the generation of the project increase from 127MW to 140 MW, extensive desk study was carried out. The approved EIA of the project was reviewed extensively and other documents were studied to obtain information.

E.4 Existing Environmental Condition

E.4.1 Physical Environment

The THP is located in the Gandaki River Basin and total catchment of the basin up to the intake site is 1502 km² of which about 129 km² is covered with snow. The project site itself is located in the Lesser Himalayan Physiographic Region, which is classified as a sub-tropical region. The project includes a dam of 140m height and a reservoir extending upstream up to 18km in length on the Seti River. The Seti is the major river which drains the project area. *There are no any significant changes in watershed and drainage condition as compared to the approved EIA report.* The width of the river at the dam site is approximately 30 m and these are mentioned in approved EIA report which are same in S-EIA report. In the approved EIA report, it is mentioned that the land use in the project area, especially in the reservoir is mainly forest and patches of fertile agricultural land, especially at the end of the reservoir. The dam site and the power house site are located in the interior rural setting of the Tanahu District. There is no industry or road traffic in the immediate project area and therefore there is no noise pollution in the core project area. So, there is no change in Noise quality as compared to the approved EIA report.



E.4.2 Biological Environment

There is no difference in the vegetation composition of the forest in the project area along the Seti River. *Shorea robusta* (Hill Sal) is the dominant species, which is normally observed above EL.400 m. The associates of this forest are *Schima wallichii* (Chilaune), *Lagerstroemia parviflora* (Botdhyero), *Bauhinia vahlii* (Bhorla) and *Desmodium oojeinense* (Sadan) etc. *Terminalia alata* (Saj), *Mallotus philippensis* (Sindhure), *Albizia chinensis*, *Albizia lebbeck*, *Sapium insigne* (Khirro), Bamboo sp., *Lagerstroemia parviflora* (Botdhyero), *Bauhinia vahlii* (Bhorla) and *Desmodium oojeinense* (sadan) are commonly found in this forest area. Other associates are *Murraya koenigii*, *Leea macrophylla* and *Dioscorea bulbifera*. *Acacia catechu* (Khair) is the representative species of this forest area. It is mostly found just at the side of the rich alluvial deposits along the Seti River. The associate species of this forest is *Bombax ceiba* (Simal), *Dalbergia sisoo* (Sisoo), *Sapium insigne* (Khirro), *Murraya koenigii* and so on. The Khair forest is threatened due to fewer seedlings in the area as well as due to high usage. *Dalbergia sisoo* (Sisoo) is mostly planted associated with wild Khair.

In the approved EIA, there are nine community forest in the reservoir area and project facilities sites however during the tree counting number of community forest increased to 25.

E.4.3 Socio-economic and Cultural Environment

According to the Census 2011, total population of Tanahu district is 323,288 and with 143,410 (44.36%) male and 179,878 (55.64%) female respectively. Total number of households (HHs) is 78,309 with an average size of 4.13. According to approved EIA report, a total of 8 VDCs (Bhimad, Chhang, Rising Ranipokhari, Majhkot, Kotdarbar, Jamune Bhanjyang, Pokhari Bhanjyang) and one municipality are affected by the project. Now, Pokhari Bhanjyang has been merged into Byas Municipality-13 and Sabung Bhagwatipur is added in the list of project affected VDC. Therefore, the total population of 8 VDCs and one municipality in the project area is 98,934 with 43,354 (43.82%) male and 55,400 (56.18%) female. Similarly, there are 24,030 HHs in the project VDCs/Municipalities and average HH size is 4.1.

E.5 Impact Assessment

E.5.1 Physical Environment

The total land take for various project components like the damsite, reservoir and powerhouse, as well as construction borrow pits and quarries, temporary and permanent work camps and construction of an access road is estimated at 1075.01ha. Out of this, 901ha land for reservoir, 18ha land for damsite and powerhouse, 30 ha land for construction of access road and 25ha land for permanent work camp will be permanently acquired. Similarly, 25ha land for borrow pits and quarry areas, 35ha land for temporary construction camps and 41.01ha for area of disposal sites will be temporarily acquired. Land take by the project is same except muck disposal area as compared to the approved EIA report. *The approved EIA has not mentioned about the muck disposal sites and generation and disposal of muck.*

E.5.2 Biological Environment

There is no significant changes in impact on the biological environment except some changes in the number of trees to be felled down as compared with the approved EIA report.

The THP affects 422.89ha of forest land in Tanahu district. Out of this, 353.89ha shall be acquired for reservoir area (FSL of 415+10m), 69ha for project facilities and 0.3ha for muck disposal sites. As per the tree numbering carried out, a total of 22,453 trees and 67,735 pole size tree will be cleared up from 25 community forests in the reservoir area and project facilities sites during the project implementation. So, a total of 90,188 trees need to be felled from reservoir area and project sites area.

E.5.3 Socio-economic and Cultural Environment

Project will acquire 170.09ha cultivated land for the construction of different components which is 15.9% of the total required land. The EIA identified the private structures and its ownership. Construction of the project needs the permanent acquisition of 313 private structures owned by 110 families and there is no change in the number of persons and affected structures than mentioned in the EIA report. Reservoir inundation will affect community infrastructure, including suspension bridges, motor able roads, foot trail, sources of drinking water, cremation sites.

E.6 Mitigation and Enhancement Measures

E.6.1 Physical Environment

The watershed management will include afforestation programs to limit slope erosion and sedimentation in the reservoir and constructing of check dams in tributaries, which will be transporting sediment into the reservoir. Spraying of road surfaces with water will be done to minimize the generation of dust and Excavated materials will be properly dumped and disposed. *For the protection from erosion of land of Jhapurtar village near the confluence of Seti and Madi rivers, river training works will be carried out. Similarly, protection work will be done along the bank of river from dam site towards the confluence of Seti and Madi rivers.*

E.6.2 Biological Environment

As a compensatory measure for the loss of trees due to the project, plantation in 1:25 ratio will be carried out as guided by राष्ट्रिय प्राथमिकता प्राप्त योजनाको लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्ने सम्बन्धि कार्यविधि २०७४. The compensatory plantation will be conducted for 90,188 trees (pole and tree sized) that will be cleared from community forests.

A total of 22,54,700 seedlings of different species of plants will be planted as compensatory plantation. Therefore total estimated compensatory plantation cost will be NRS 39,45,72,500.

E.6.3 Socio-economic and Cultural Environment

The construction of the THP requires the permanent acquisition of 151.2ha of cultivated land owned by 838 families and approximately 20ha of temporary land acquisition. Out of 838 households, 86 lose their residential houses due to the construction of the reservoir and project facilities sites. The project proponent will construct infrastructures and community structures at the appropriate location in coordination with the local users and local governmental bodies such as the District Development Committee (DDC) and Distribution Consumers Service of NEA, etc before the construction of the project. THP will provide the local communities and the region itself with numerous opportunities for socio-economic development. Direct and indirect job creation may be considered the primary benefit, there are nevertheless a range of opportunities which will open to government, private sector and

the local communities to both build upon, and enhance positive impacts of the project. The project area of THP including 220kV TL is still not electrified or partially electrified in some places. The rural electrification is a priority development demand of the communities living in the surrounding VDCs of the THP development area. Project intends to electrify the nearby villages which will be affected by the project.

E.7 Environmental Management Plan

There is no change in the Environmental Management Plan (EMP) outlined in the approved EIA except a small addition on the grievance redress mechanism. Approved EIA did not include a process to handle complaints and grievances on social and environmental issues. Hence, a grievance redress mechanism is included in this Supplementary EIA, as part of the required producers during implementation. A grievance redress mechanism (GRM) will be established to receive and facilitate the resolution of affected people's concerns, complaints, and grievances on social and to address their concerns.

E.8 Public Consultation and Information Disclosure

Altogether 8 meetings were conducted in the project area. The main objective of the meeting was to collect data related to education, health, drinking water, gender, development activities and issues/concerns of local people regarding the project as well as to inform the local people about the Project. The public hearing program was organized in the project site at Jhaputar of Kahun Shivapur VDC, Tanahun district on Shrawan 17, 2073 (August 3, 2016).

E.9 Review of Policy and Legal Provision

The then prevailing Plans/ Policies, Acts, Rules/ Regulations Guidelines, Standards, Conventions Strategies, etc. which were required for the development of hydroelectric projects in Nepal were reviewed while preparing the approved EIA report of THP. *In addition to legal provisions reviewed during the EIA, Constitution of Nepal 2072, Fifth Amendment of EPR, 2054, Forest Policy, 2071 and राष्ट्रिय प्राथमिकता प्राप्त योजनाको लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्ने सम्बन्धि कार्यविधि २०७४ are also reviewed for preparing this S-EIA report.* The proponent will abide by any other laws besides those already mentioned in the document, attracted due to various activities, that will be undertaken during project implementation.

E.10 Conclusion

The finding of S- EIA shows that the adverse impacts on Physical, Biological, Socio-economic and Cultural environment due to the implementation of the proposed project are moderate type. Wherever possible, efforts have been made by the project planning team to limit adverse impacts on the environment by selecting environmentally benign design options and otherwise suggesting appropriate mitigation measures.



THE UNITED STATES OF AMERICA
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कार्यकारी सारांश

१. परिचय

नेपाल विद्युत प्राधिकरण, वातावरण तथा सामाजिक अध्ययन विभागले १२७ मे.वा. तनहुँ जलविद्युत आयोजना (माथिल्लो सेती जलविद्युत आयोजना)को वातावरणीय प्रभाव मूल्यांकन (EIA) अध्ययन सम्पन्न गरेको थियो र तत्कालिन वातावरण मन्त्रालयले वि.स.२०६६ कार्तिक ५ गते यसलाई स्वीकृत गरेको थियो ।

टर्बाइनको उत्पादन क्षमताको कारणले तनहुँ जलविद्युत आयोजना (THP) को क्षमता १२७ मे.वा.बाट १४० मे.वा.मा बृद्धि गरियो । अधिल्लो स्वीकृत वातावरणीय प्रभाव मूल्यांकनसँग आयोजनाको रूपरेखा र क्षमता तुलना गर्दा आयोजना क्षेत्रको अञ्चल (गण्डकी) वा जिल्ला (तनहुँ) मा कुनै परिवर्तन छैन । स्थानिय तह पुर्नसंरचना अनुसार हाल यो आयोजना प्रदेश नं ४ मा अवस्थित रहेको छ । गा.वि.स को सन्दर्भमा साबुङ्ग भगवतिपुरलाई आयोजना प्रभावित क्षेत्रको रूपमा जोडिएको छ भने पोखरी भञ्ज्याङ्ग गा.वि.स. ब्यास नगरपालिका-१३ मा गाभिएको छ । तनहुँ जलविद्युत आयोजना को पूरक वातावरणीय प्रभाव मूल्याङ्कन तयारीको लागि नेपाल विद्युत प्राधिकरण, वातावरण तथा सामाजिक अध्ययन विभाग जवाफदेही हुनेछ ।

आयोजनाको रूपरेखा तथा मुख्यतः जडित क्षमताको परिवर्तनको कारण भौतिक, जैविक र सामाजिक वातावरणमा केही अपेक्षित परिवर्तनहरु आएका छन् । जलाशय क्षेत्र तथा आयोजनाका अन्य संरचना क्षेत्रहरुमा बोटविरुवा सर्वेक्षण/गणना गर्दा सामुदायिक वनमा केहि परिवर्तन देखियो । स्वीकृत वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदनको तुलनामा सामुदायिक वनको रुखहरुको संख्यामा गिरावट आयो । यस्तो परिस्थितीमा, तनहुँ जलविद्युतको लागि पूरक वातावरणीय प्रभाव मूल्याङ्कन निर्देशिका-२०७१ ले निर्देशित गरे बमोजिम पूरक वातावरणीय प्रभाव मूल्याङ्कन गर्न आवश्यक ठानियो ।

२. आयोजनाको विवरण

जडित क्षमता १४० मे.वा. र बाधको उचाई १४० मिटर रहने तनहुँ जलविद्युत आयोजना पश्चिमाञ्चल विकास क्षेत्रको तनहुँ जिल्लामा अवस्थित रहने छ । यो एक जलाशययुक्त किसिमको जलविद्युत आयोजना हो । यस आयोजनाको सम्भाव्यता अध्ययन नेपाल विद्युत प्राधिकरणले सञ्चालन गरि जुलाई २००१मा सम्पन्न गरेको थियो। यस जलाशययुक्त आयोजनामा निम्न किसिमका संरचनाहरु जस्तै- १४० मिटर अग्लो कंक्रीट ग्राभिट बांध जसको उचाई समुद्र सतह देखी ४१५ मिटर र ७.२६ वर्ग कि.मी क्षेत्रफलमा फैलने छ, २९५,१००,००० घन मी. पानी, एउटा सतहि इन्टेक, १७५ मि. लामो पेनस्टक र २X७० मेगावाटको फ्रान्सीस टर्बाइन भएको भूमिगत विद्युतगृह रहनेछ । पृथ्वी राजमार्गबाट ६ कि.मी पहेँच सडक बाधको दाँया र बाँया जोडिन्छ जहाँ सेति नदी माथि नयाँ बनेको आर.सी.सी. पुलबाट अर्को ४.४ कि.मी को सडक पनि विद्युतगृह क्षेत्रमा जोडिन्छ ।

यो आयोजना अर्ध शहरी क्षेत्रको नजिक अवस्थित रहेको छ । आयोजना क्षेत्रबाट पोखरा केवल ४० कि.मी. को दुरीमा अवस्थित छ । आयोजना क्षेत्रको बाध ब्यास नगरपालिकाको दमौली बजार नजिक अवस्थित छ । जलाशय को फैलावट ब्यास नगरपालिका, काहुशिवपुर, जामुन्ने, रिसिङ रानीपोखरी, कोट दरवार, छाङ्ग, साबुङ्ग, भगवतीपुर, माभुकोट र भिमाद गा.वि.स.हरु सम्म फैलन पुग्छ । यो विद्युतगृह ब्यास नगरपालिका र काहुशिवपुर गा.वि.स. मा अवस्थित रहेको छ ।

दुवै डाइभर्सन टनेलका लम्बाईमा ७१२ मि. प्रथम, ८८१ मि.द्वितीय बाट ५५६ मि. प्रथम र ६२२ मि. द्वितीयमा घटेका छन् । ड्याम गेट र स्पिलवे डिजाइन हाइड्रोलिक मोडेलिंगमा आधारित भइ परिमार्जन गरिएका छन् । स्पिलवेको आधारमा रिटेइनीङ्ग वालहरु विचको दुरी घटाउन प्रत्येक गेटको आकार १६.५ मि. चौडा र ११ मि. उचाई बृद्धि गर्न गेट डिजाइनमा भएको परिवर्तनले अहिले गेटको संख्या छ बाट तीनमा झरेको छ । बायातिर र बाकि दुई गेट दायातिर अवस्थित रहेको छ । दाया किनारामा एक ७.४ मि. ब्यास र ११ मि. उचाई टनेल (स्वीकृत वातावरण प्रभाव मूल्याङ्कनमा ७.८ मि. डाएमिटर र ९२७ मि. लामो) निर्माण गरिने छ ।

३. अध्ययन विधि

पूरक वातावरणीय प्रभाव मूल्याङ्कन कार्य प्रक्रिया वातावरण संरक्षण ऐन- २०५३, वातावरण संरक्षण नियमावली- २०५४, राष्ट्रिय वातावरण मूल्याङ्कन निर्देशिका-१९९३ तथा अवलम्बन गरिएको छ। यो पूरक वातावरणीय प्रभाव मूल्याङ्कन नेपाल सरकारको कानूनी आवश्यकता पुरा गर्न स्थलगत अध्ययन, स्थानीय जनता तथा निकायसँग समन्वय गरी तयार गरिएको छ।

बनस्पति अध्ययनको सन्दर्भमा स्वीकृत वातावरणीय प्रभाव मूल्याङ्कन भन्दा भिन्न ढङ्गले जलाशय क्षेत्रको सामुदायिक वनका गणना गरिएका रुखहरु सर्वेक्षण तथ्याङ्कबाट प्राप्त गरिएको छ। यसले वास्तवमै आयोजना निर्माणको लागि जलाशयमा सामुदायिक वनबाट हटाउनु पर्ने रुखहरुको यथार्थता प्रदान गर्दथ्यो। अन्य अनुशरण गरिएका विधिहरुमा क्षेत्र अध्ययन तथा सार्वजनिक छलफलहरु थिए।

यस आयोजना क्षेत्रमा स्थानिय बासिन्दाहरुको राय, सल्लाह, सुझाव लिन तथा आयोजनाको बारेमा जानकारी दिन एउटा सार्वजनिक सुनुवाई कार्यक्रम सञ्चालन गरिएको थियो। यसरी तनहुँ हाइड्रोपावर आयोजनाको पूरक वातावरणीय प्रभाव मूल्याङ्कनको परिणामको बारेमा स्थानिय बासिन्दाहरु वा सरोकारवालाहरुको राय तथा सल्लाह सुझावको लागि सञ्चालन गरिने सार्वजनिक सुनुवाई कार्यक्रमको लागि स्थानिय समाचारपत्रमा एउटा सार्वजनिक सूचना प्रकाशित गरिएको थियो।

४. अद्यावधिक वातावरणीय अवस्था

४.१. भौतिक वातावरण

गण्डकी नदी ढलो क्षेत्र मा अवस्थित सेती नदी मा प्रस्तावित तनहुँ जलविद्युत आयोजनाको जलाधार क्षेत्र १५०२ वर्ग किलोमिटर रहेको छ जसमा करिव १२९ वर्ग किलोमिटर भाग हिउँले ढाकेको छ। यो आयोजना lesser himalayan region मा पर्दछ। यस आयोजनाको बाधको उचाइ १४० मिटर र जलाशय क्षेत्रको लम्बाई करिव १८ किलोमिटर रहेको छ। स्वीकृत वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदनको तुलनामा जलाशय क्षेत्र र निकास(drainage)को अवस्थामा कुनै उल्लेखनीय परिवर्तन देखिएको छैन। बाधक्षेत्रमा नदीको चौडाई करिव ३० मि. रहेको छ जुन स्वीकृत वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदनमा उल्लेख गरिएको थियो। आयोजना क्षेत्रमा विशेषगरी जलाशय क्षेत्रको माथिल्लो क्षेत्रमा स्वीकृत वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदनमा जंगल तथा उर्वर कृषियोग्य जमिनका फाटहरु रहेका कुराहरु उल्लेखित छ। बाध र विद्युत गृह क्षेत्र तनहुँ जिल्लाको भित्र ग्रामिण भेगमा अवस्थित छ। हाल आयोजना क्षेत्रमा कुनै उद्योग तथा सडक जाम नभएकोले परियोजना क्षेत्रमा कुनै ध्वनी प्रदुशण छैन। त्यसैले, स्वीकृत वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदनको तुलनामा ध्वनी गुणस्तरमा कुनै पनि परिवर्तन छैन।

४.२ जैविक वातावरण

आयोजना क्षेत्रको वन जंगलको वनस्पति संरचनामा कुनै फरक परेको छैन। पहाडी साल प्रमुख वनस्पतिको रुपमा रहेका छ जुन सामान्यतः EL ४०० मि. माथि देखिन्छ। अन्य सम्मिलित वनस्पतिमा चिलाउँने, बोटधमेरो, भोर्ला तथा साधन जस्ता वनस्पति मिश्रित रुपमा पाइन्छन्। साभ्र, सिन्दुरे, खिर्रो, बास, बोट्ठ्येरो, भोर्ला तथा साधन वनजंगल क्षेत्रमा सामान्यत पाउँने वनस्पतिहरु हुन्। खयर प्रतिनिधित्व वनस्पतिको रुपमा रहेको छ। अन्य प्रमुख वनस्पतिको रुपमा सिमल, सिसौ, खिर्रो, आदि पर्दछन्। उच्च प्रयोगको कारण खयर जोखिममा रहेको छ। सिसौ प्राय जसो जंगली खयर सँगै वृक्षारोपण गरिन्छ। स्वीकृत वातावरणीय प्रभाव मूल्यांकन प्रतिवेदनमा जम्मा चौ वटा सामुदायिक वन मात्र जलाशय क्षेत्र तथा आयोजनाका अन्य संरचना क्षेत्रहरुमा रहेको भनिएको छ। यी रुखहरु गणना गर्ने क्रममा सामुदायिक वनको संख्या वृद्धि भइ २५ पुगेको पाइएको छ।



४.३ सामाजिक आर्थिक तथा सांस्कृतिक वातावरण

राष्ट्रिय सर्वेक्षण २०६८ अनुसार तनहुँ जिल्लाको जम्मा जनसंख्या ३२३२८८ रहेको छ जहाँ पुरुष र महिलाको जनसंख्या क्रमशः १४३४१० (४४.३६%) र १७९९७८ (५५.६४%) रहेको छ । औसत आकार ४.१३ सहित जम्मा घरघुरी सख्या ७८३०९ रहेको छ । स्वीकृत वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदन अनुसार जम्मा आठ गा.वि.स. हरू (भिमाद, छाङ्ग, काहुँ शिवपुर, रिसिङ्ग रानीपोखरी, माभुकोट, कोटदरवार, जामुने भञ्ज्याङ्ग, पोखरी भञ्ज्याङ्ग) र एक मात्र ब्यास नगरपालिकालाई यस आयोजनाले प्रभाव पार्दछ । अहिले पोखरी भञ्ज्याङ्ग गा.वि.स. ब्यास नगरपालिकामा गाभिएको छ र साबुङ्ग भगवतीपुरलाई आयोजना प्रभावित गा.वि.स. को रुपमा सूचिकृत गरिएको छ । त्यसकारण, आयोजना क्षेत्रका आठ गा.वि.स.हरु र एक नगरपालिकाको जम्मा जनसंख्या पुरुष ४३३५४ (४३.८२%) र महिला ५५४०० (५६.१८%) सहित ९८९३४ रहेको छ । त्यसैगरी, आयोजना प्रभावित क्षेत्रमा जम्मा २४०३० घरपरिवार रहेका छन् र औषत घरपरिवार ४.१ रहेको छ ।

५. प्रभाव मूल्यांकन

५.१ भौतिक वातावरण

आयोजनाको विभिन्न प्रयोजन जस्तै बाधक्षेत्र, जलाशय तथा विद्युतगृहका साथसाथै borrow pits र quarries, अस्थायी तथा स्थायी शिविर तथा पहुँच सडक निर्माणको लागि जम्मा १०७५.०१ हे. जमिन लाग्ने अनुमान गरिएको छ । यसमध्ये, ९०१ हे. जमिन जलाशयको लागि, १८ हे. बाधक्षेत्र र विद्युतगृहको लागि, ३० हे. पहुँच सडक निर्माण तथा २५ हे. जमिन स्थायी शिविरको लागि स्थायी रुपमा अधिग्रहण गरिने छ । यसैगरी, २५ हे. जमिन borrow pits र quarries क्षेत्रको लागि, ३५ हे. जमिन अस्थायी शिविरको लागि र ४१.०१ हे. जमिन फोहोर विसर्जन क्षेत्रको लागि अस्थायी रुपमा अधिग्रहण गरिने छ । फोहोर विसर्जन क्षेत्र बाहेक आयोजनाले लिने जमिन स्वीकृत वातावरणीय प्रभाव मूल्यांकन प्रतिवेदनको तुलनामा उस्तै रहन्छ । स्वीकृत वातावरणीय प्रभाव मूल्यांकनले फोहोर विसर्जन क्षेत्र र उत्पादन (जेनेरेसन) तथा फोहोर विसर्जनको बारेमा उल्लेख गरेको छैन ।

५.२ जैविक वातावरण

केहि रुखहरु कटान गर्ने देखि बाहेक स्वीकृत वातावरणीय प्रभाव मूल्यांकन प्रतिवेदनको तुलनामा जैविक वातावरण खासै उल्लेखनिय प्रभाव हुने छैन । तनहुँ जलविद्युत आयोजनाले तनहुँ जिल्लाको ४२२.८९ हे. वन क्षेत्रमा प्रभावित गर्दछ । यस मध्ये, ३५३.८९ हे. जमिन जलाशय क्षेत्रको लागि, (FSL of 415+10m), ६८.७ हे. आयोजना सुविधाको लागि र ०.३ हे. जमिन फोहोर विसर्जन क्षेत्रको लागि अधिग्रहण गरिने छ । बोटविरुवा संख्या गणना गरिए अनुसार आयोजना कार्यान्वयन अवधिमा जलाशय क्षेत्रको लागि २४ सामुदायिक वनको गरी जम्मा २२११०, सरकारी वनबाट ८९६४३ र निजी वनबाट २४४३ रुखहरु कटान गरिने छ । यसको अलावा, अन्य आयोजना संरचनाहरुको लागि ३९,२६३ रुखहरु कटान गर्नुपर्ने हुन्छ । यसरी हेर्दा यस आयोजना अवलम्बन गर्दा कुल १५३,४५९ रुखहरु कटान गर्नुपर्ने हुन्छ ।

५.३ सामाजिक आर्थिक तथा सांस्कृतिक वातावरण

आयोजनाले विभिन्न संरचना निर्माणको लागि १७०.०९ हेक्टर खेतियोग्य जमिन अधिग्रहण गर्नेछ जुन जम्मा आवश्यक जमिनको १५.९ प्रतिशत हो । यस वातावरणीय प्रभाव मूल्यांकन अध्ययनले केहि व्यक्तिगत संरचना र यसको स्वामित्व पहिचान गरेको छ । आयोजनाको संरचना निर्माणको लागि ११० जना घरपरिवारको स्वामित्वमा रहेको ३१३ निजी संरचनाहरु स्थाई रुपमा अधिग्रहण गर्नु आवश्यक हुन्छ र यसले तत्कालिन वातावरणीय प्रभाव मूल्यांकन प्रतिवेदनमा उल्लेख भएका व्यक्तिहरुको संख्या र प्रभावित संरचनामा कुनै परिवर्तन हुने जनाइसकेले ले भोलुङ्गे पुल, मोटरवाटो, पैदल वाटो, खानेपानीका स्रोतहरु दाहासंस्कार क्षेत्र जस्ता सामुदायिक संरचनाहरुलाई डुवान गर्नेछ ।

६. प्रभाव न्यूनीकरण तथा अभिवृद्धि

६.१ भौतिक वातावरण

आयोजना क्षेत्रमा भूक्षय नियन्त्रणको लागि जलाधार व्यवस्थापन अन्तरगत वृक्षरोपणका कार्यक्रमहरू गरिने छन् । वाटो र पहुँच मार्गमा धुलो नियन्त्रणका लागि पानी छर्किने कार्य गरिनेछ । भ्याप्टारमा सेती र मादीको दोभान नजिक *river training works* कार्य गरिनेछ । साथै नदी सरंक्षण कार्य बाध स्थल देखि सेती र मादीको दोभानसम्म पनि गरिनेछ ।

६.२ जैविक वातावरण

आयोजनाको कारणले बोटविरुवाको क्षतिको लागि सट्टभर्ना मापनको रूपमा राष्ट्रिय प्राथमिकता प्राप्त योजनाको लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्ने सम्वन्धि कार्यविधि २०७४ ले निर्देशन गरेबमोजिम १:२५ को अनुपातमा सम्पन्न गरिने छ । सट्टभर्ना वृक्षारोपण ९०,१८८ बोटविरुवाहरू (खम्बा र रुख आकारका) का लागि सञ्चालन गरिने छ जुन संख्यामा सामुदायिक वनका बोटविरुवाहरू काटिने छन् ।

सवैगरी विभिन्न प्रजातिका विरुवाका २२,५४,७०० बेर्नाहरू वृक्षारोपण गरिने छन् । त्यसकारण, सट्टभर्ना वृक्षारोपणको अनुमानित लागत रु ३९,४५,७२५०० हुनेछ ।

६.३ सामाजिक आर्थिक तथा सास्कृतिक वातावरण

यस तनहुँ जलविद्युत आयोजनाको लागि ८३८ घरपरिवारको स्वामित्वमा रहेको १५१.२ हेक्टर खेतियोग्य जमिन स्थायी रूपमा र करिव २० हेक्टर अस्थायी रूपमा अधिग्रहण गर्नु आवश्यक छ । ८३८ जना घरपरिवार मध्ये ८६ घरपरिवारले उनिहरूको बसोबासको घर जलाशय र आयोजना सुविधा क्षेत्र निर्माणको कारणले गुमाउँन पुग्छन् । आयोजकले स्थानिय प्रयोगकर्ता तथा स्थानिय सरकारी निकायहरू जस्तै जिल्ला विकास समिति र नेपाल विद्युत प्राधिकरणको ग्राहक तथा वितरण सेवाको सहकार्यमा आधारसंरचना र सामुदायिक संरचनाहरू उचित ठाउँमा निर्माण गर्नेछन् । तनहुँ हाइड्रो पावर आयोजनाले स्थानिय समुदायहरू र क्षेत्रको सामाजिक आर्थिक विकासको लागि आफैमा उल्लेखनिय अवसरहरू प्रदान गर्दछ । प्रत्यक्ष वा अप्रत्यक्ष रूपमा रोजगार सिर्जना गर्ने कुरालाई यसको प्राथमिक फाइदाको रूपमा मनन गर्न सकिन्छ । २२० के. भी प्रसारण लाइन लगायत तनहुँ जलविद्युत आयोजना क्षेत्रमा अझै विद्युतीकरण भएको छैन वा केही ठाउँमा आंशिक रूपमा मात्र भएका छन् । यस आयोजना वरीपरीका केही गा.वि.स.हरूमा बसोबास गर्ने समुदायका मुख्य माग ग्रामिण विद्युतीकरण हो । त्यसैले आयोजनाले प्रभावपार्ने नजिकका गाउँहरूमा विद्युतीकरण गर्ने अभिप्राय यस आयोजनाले राख्दछ ।

७. वातावरण व्यवस्थापन योजना

एउटा अतिरिक्त गुनासो (grievance) निवारण सम्यन्त्रमा बाहेक स्वीकृत वातावरणीय प्रभाव मूल्याङ्कनले रेखांकित गरेको वातावरणीय व्यवस्थापन योजनामा कुनै परिवर्तन भएको छैन । स्वीकृत वातावरणीय प्रभाव मूल्याङ्कनले सामाजिक तथा वातावरणीय मुद्दाहरूमा देखा पर्ने गुनासो तथा उजुरी सुन्नलाई कुनै प्रक्रिया समावेश गरेको थिएन । अतः यस पूरक वातावरणीय प्रभाव मूल्याङ्कनमा गुनासो निराकरण सम्यन्त्र (grievance redress mechanism) कार्यान्वयनको क्रममा चाहिने प्रक्रियाको एक भागको रूपमा समावेश गरिएको छ । सामाजिक क्षेत्रमा प्रभावित जनताको सरोकार तथा गुनासा प्राप्त गर्न, सहयोग तथा सम्बोधन गर्न एउटा गुनासो निराकरण सम्यन्त्र स्थापना गरिने छ ।



८. सार्वजनिक छलफल तथा सूचना प्रवाह

आयोजना क्षेत्रको शिक्षा, स्वास्थ्य, खानेपानी, लैंगिकता, विकास क्रियाकलाप तथा आयोजना सम्बन्धी स्थानीय जनताको राय बुझ्ने साथसाथै आयोजना सम्बन्धी स्थानीय जनतालाई जानकारी दिने उद्देश्यले आयोजना क्षेत्रमा आठ वटा छलफल सञ्चालन गरिएको थियो । आयोजना क्षेत्रमा सार्वजनिक सुनुवाई कार्यक्रम तनहुँ जिल्लाको काहुनशिवपुर गा.वि.स को भापुटारमा वि.स. २०७२ श्रावण १७ (अगष्ट ३, २०१६) मा सम्पन्न गरिएको थियो ।

९. निति, नियम तथा कानुनी प्रावधानको पुनरावलोकन

स्वीकृत तनहुँ जलविद्युत आयोजनाको वातावरणीय प्रभाव मूल्यांकन प्रतिवेदनको तयारीको क्रममा पुनरावलोकन गरिएका तत्कालिक अभ्यासमा रहेका नेपालमा हाइड्रोइलेक्ट्रिक आयोजना निर्माण गर्दा आवश्यक पर्ने निति/नियम, कानून, रणनीति, योजना, ऐन तथा निर्देशिकाहरूको पुनरावलोकन गरिएका छन् । यसका अतिरिक्त, यस पूरक वातावरणीय प्रभाव मूल्यांकन प्रतिवेदन तयारीको क्रममा नेपालको संविधान-२०७२, वातावरणिय सुरक्षा नियमावली-२०५४ (पाचौँ संसोधन), वन नीति-२०७१ र राष्ट्रिय प्राथमिकता प्राप्त योजनाको लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्ने सम्बन्धि कार्यविधि २०७४ पनि पुनरावलोकन गरिएका छन् । आयोजनाको कार्यान्वयनको चरणमा दस्तावेजमा उल्लेख भएका कानून बाहेक आर्कषित हुने अन्य कानूनहरू पनि आयोजकले पालना गर्ने छन् ।

१०. निष्कर्ष

पूरक वातावरणीय प्रभाव मूल्यांकनको निष्कर्षले प्रस्तावित आयोजनाको कार्यान्वयनले गर्दा भौतिक, जैविक, सामाजिक आर्थिक तथा सांस्कृतिक वातावरणमा पर्ने प्रतिकुल प्रभाव मध्यय प्रकारको रहने देखाउँछ । आयोजना योजनाकारद्वारा सम्भव भएसम्म वातावरणीय मैत्री ढाँचा वा प्रभाव न्युनिकरणको लागि प्राप्त उचित सल्लाह छनौट गरी वातावरणमा पर्ने प्रतिकुल प्रभावलाई सिमित गर्न प्रयास गर्ने छन् ।





ACRONYMS AND ABBREVIATIONS

CBS	-	Central Bureau of Statistics
CDO	-	Chief District Officer
CF	-	Community Forest
CFC	-	Compensation Fixation Committee
CFUG	-	Community Forest Users' Group
CITES	-	Convention on International Trade of Endangered species of Wild Fauna and Flora
DDC	-	District Development Committee
DoED	-	Department of Electricity Development
EF	-	Environmental Flow
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
EPA	-	Environment Protection Act, 2053
EPR	-	Environment Protection Rules, 2054
ESSD	-	Environment and Social Studies Department
FSL	-	Full Supply Level
GHG	-	Green House Gases
GoN	-	Government of Nepal
GRM	-	Grievances Redress Mechanism
HH	-	Household
ILO	-	International Labour Organization
INGO	-	International Non-Governmental Organization
MoEn	-	Ministry of Energy
MoFSC	-	Ministry of Forests and Soil Conservation
MOL	-	Minimum Operating Level
MoPE	-	Ministry of Population and Environment
NEA	-	Nepal Electricity Authority
NGO	-	Non Governmental Organization
NTFP	-	Non Timber Forest Products
NEPAP	-	Nepal Environmental Policy and Action Plan
PAF	-	Project Affected Family
PGA	-	Peak Ground Acceleration
S-EIA	-	Supplementary Environmental Impact Assessment
THL	-	Tanahu Hydropower Limited
THP	-	Tanahu Hydropower Project
TL	-	Transmission Line
VDC	-	Village Development Committee

Units

GWh	-	Giga Watt-hour
ha	-	Hectare
km	-	Kilometer
m	-	Meter
MCM	-	Million Cubic Meter
MT	-	Metric Tcn
MW	-	Megawatt



STATE OF NEW YORK

IN SENATE

JANUARY 1, 1901

REPORT

OF THE

COMMISSIONER OF THE LAND OFFICE

IN RESPONSE TO A RESOLUTION

PASSED BY THE SENATE

APRIL 1, 1899

AND BY THE ASSEMBLY

APRIL 1, 1899

AND BY THE SENATE

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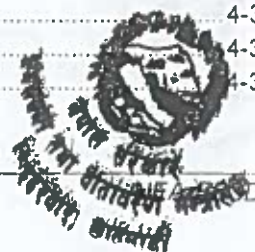
APRIL 1, 1899

AND BY THE SENATE



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1 INTRODUCTION

1.1 Background

The Environmental Impact Assessment (EIA) of 127MW Tanahu Hydropower Project (Upper Seti Hydropower Project) was carried out by Environment and Social Studies Department (ESSD) of Nepal Electricity Authority (NEA) and approved by the then Ministry of Environment on 2066/07/05 BS which is attached in Appendix G.

The contact address of the project proponent is:

Tanahu Hydropower Limited,
Trade Tower -4th Floor, Thapathali, Kathmandu
Phone: 01-5111117; Fax : 01-5111121
E-mail: info@thl.com.np

ESSD is responsible for the preparation of Supplementary EIA (S-EIA) Report for Tanahu Hydropower Project. The contact address of the organization responsible for the preparation of the Supplementary EIA Report is as follows;

Environment and Social Studies Department,
Engineering Service Directorate,
Nepal Electricity Authority,
Kharipati, Bhaktapur.

Telephone: 6611580; Fax: 6611590

E-mail: neaessd@wlink.com.np

1.2 Rationale for Change in Project Layout/Capacity

The capacity of the Tanahu Hydropower Project (THP) was increased from 127MW to 140MW. This change is mainly due to the increase in the efficiency of the turbine output. While comparing the final project layout and capacity with the previous one as per approved EIA, there is no change in the zone (Gandaki) or district level (Tanahu) of location of the project. In case of VDC, Sabung Bhagawatipur is added as project affected VDC whereas Pokhari Bhanjyang VDC merged into Byas Municipality. Technically Sabung Bhagawatipur VDC was missing in approved EIA, which is now included in S-EIA. The following table shows the changes in the project features and the rationale for changes in THP.

Table 1-1: Changes in Salient Features of the THP

S. N.	Salient Feature	Previous (As per Approved EIA)	Present (S-EIA)	Difference	Remarks
1	VDCs	Kahu Shivpur, Jamune, Rising Ranipokhari, Kot Durbar, Chhang, Majhkot, Bhimad, Pokhari Bhanjyang	Byas*, Kahu Shivpur, Jamune, Rising Ranipokhari, Kot Durbar, Chhang, Majhkot, Sabung Bhagawatipur, Bhimad	Sabung Bhagawatipur VDC added which is merged in Bhimad Municipality-5, Pokhari Bhanjyang VDC merged into Byas Municipality-13	changed due to technical reason
2	Installed Capacity	127MW	140MW	+13MW	Change in the turbine efficiency

S. N.	Salient Feature	Previous (As per Approved EIA)	Present (S-EIA)	Difference	Remarks
3	Total land take	1034 ha	1075.01 ha	+41.01ha	Addition of muck disposal sites

1.3 Rationale of the Study (S-EIA)

The EIA of the 127MW Tanahu Hydropower Project (Upper Seti Hydropower Project) approved by the then Ministry of Environment on 2066/07/05 BS. Later on, the project capacity was increased from 127MW to 140MW. So, in reference to the letter obtained from the then Ministry of Science Technology and Environment (dated 2072/08/20 BS), and as per the Environment Protection Rules (EPR), 2054 (Fifth Amendment) this S-EIA was carried out. Due to the change in the project layout and mainly the installed capacity, there are expected changes in the environment (physical, biological and social).

As per the Fifth Amendment (dated 2073/10/17) of the EPR, 2054, a supplementary EIA is required for such project which design is changed after the approval of the EIA. In such case, the proponent is required to follow all the procedures (except those for Scoping and ToR approval) for S-EIA as spelled out in EPR, 2054 [Rule 5 sub-rule 2(a)]. Similarly, some changes were observed in the community forests when final tree census/numbering was carried out in the reservoir area. The total number of trees of community forests decreased while comparing with the approved EIA report. In such circumstances, it was necessary to carry out this supplementary EIA for the THP as directed by the EPR, 2054 (Fifth Amendment).

1.4 Objectives of the Study

The aim and objective of the S-EIA is to assess the change in impacts due to change in capacity of the THP and its layout and inform decision makers about such changes to select appropriate mitigation measures to mitigate and/or minimize the adverse impacts so that the project is implemented in an environmentally sound manner. The specific objective of the study is to prepare Supplementary EIA report. The other general objectives of the study are to:

- Document the changes in physical, biological, socio-economic and cultural baseline conditions of project area as compared with the approved EIA;
- Identify, predict and assess the change in adverse and beneficial environmental impacts of the THP and compare it with those assessed in the approved EIA;
- Suggest changes in mitigation and enhancement measures for impacts and monitoring plan wherever required;
- Familiarize various stakeholders with the change in the project configuration and supplementary EIA outcomes through public consultation, public hearing and participation programs.

1.5 Scope of S-EIA

The scope of S-EIA includes the assessment of impacts due to the change in the project components and design and suggest suitable mitigation measures. The change in project components and design includes quarry sites, muck disposal area and hydropower component.

2 PROJECT DESCRIPTION

2.1 Introduction

The Tanahu Hydropower Project (THP) with a dam height of 140m and installed capacity of 140MW is located in the Tanahu District in the Western Nepal. This is a storage type hydroelectric project proposed on the Seti River which is one of the major tributaries of the Sapta-Gandaki River in the Gandaki basin. The proposed dam is located about 2km upstream of the confluence of the Seti and Madi rivers, whereas the underground powerhouse is located downstream of the dam site. This storage project involves the following components: 140m concrete gravity dam with the Full Supply Level at an elevation of 415 masl, 7.26 sq.km surface area of the reservoir with gross storage capacity of 295.1MCM, 175m long penstock, an underground powerhouse consisting of 2 x 70MW Francis Turbines.

2.2 Need of New Planning and Development Concept

The capacity of the project has changed mainly due to the increase in the efficiency of the turbine. In addition to this, the project has finalized the muck disposal site which has resulted in the increase in the total land take by the project. There is no change in reservoir area and other project facilities, so the impacts of the project are almost same as mentioned in the approved EIA.

2.3 Project Location and Accessibility

The THP is located in Tanahu District of Province 4 (Figure 2.1). The project is located closer to the semi-urban area, Pokhara which is just 40km away from the project site. The dam site of the project is located near Damauli Bazaar at Byas Municipality and Kahu Shivapur VDC on the left and right banks of the Seti River, respectively. The reservoir extends to Byas Municipality, Kahu Shivpur, Jamune, Rising Ranipokhari, Kot Durbar, Chhang, Sabung Bhagawatipur, Majhkot and Bhimad VDCs. The powerhouse is located at Byas Municipality and Kahu Shivpur VDC (Figure 2.2). Pokhari Bhanjyang VDC has been merged in Byas Municipality which was included as separate VDC in approved EIA report. The proposed camp areas, borrow areas and quarry sites are located mainly in the Byas Municipality and Kahu Shivpur VDC as shown in project layout map. The proposed project is located in the same area as mentioned in the approved EIA report. With the recent changes in the structure of local government body, the project affected VDCs and municipality are renamed as follows:

Table 2-1: Restructuring of the Project Affected Local Body

S.N.	New Local Bodies	Previous Local Body affected by the project
1.	Bhimad Municipality	Majhkot VDC (ward 1-5, 7-9)
		Rising Ranipokhari VDC (ward -9)
		Bhimad VDC (ward 1-9)
		Sabung Bhagawatipur VDC (ward 2)
2.	Byas Municipality	Byas Municipality (ward 5 and 13). Pokhari Bhanjyang has already been merged in Byas Municipality before restructuring of local bodies which is now in Byas-13.
3.	Rising Rural Municipality (Gaupalika)	Kahushivapur (ward 1-9)
		Kotdurbar VDC (ward 1-9)
		Rising Ranipokhari VDC (ward 1-8)
		Majhkot VDC (ward 6)
4.	Myagde Rural Municipality	Jamune VDC (ward 1-9)
		Chhang VDC (ward 1-9)

Location Map of Tanahu Hydropower Project

Legend

- Others District
- Affected Tanahu District
- National Boundary

Tanahu HEP

0 50 100 150 200 Kilometers

Figure 2-1: Project Location Map

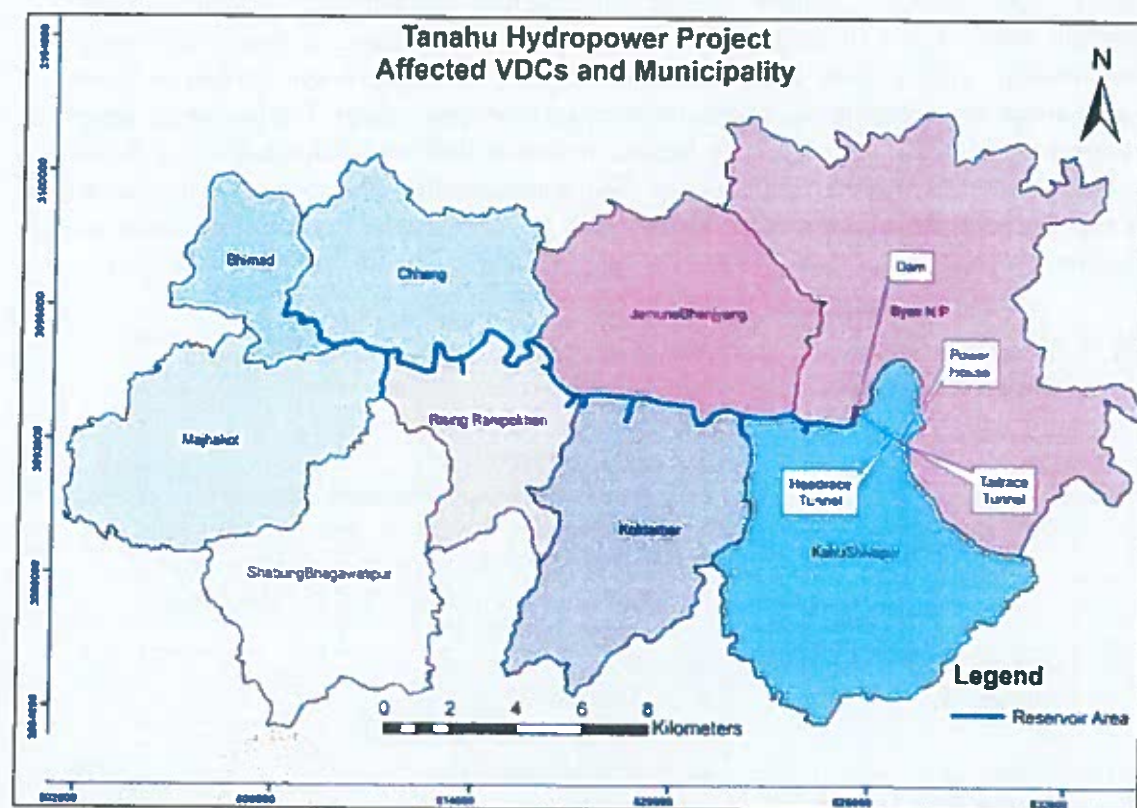


Figure 2-2: Project Affected VDCs and Municipality

The project can be accessed through road and is located about 170km west from Kathmandu. The Prithvi Highway leads to Damauli bazar from Kathmandu and from Damauli, the project site can be reached by project access road of about 10.4km. Alternatively, the nearest airport to the project is Pokhara Airport which is about 40km from Damauli Bazar. The 6km access road from the Prithivi Highway connects to the left and right bank of the dam site whereas another 4.4km road connects to the powerhouse site from the newly constructed RCC Bridge on the Seti River. Figure 2-3 shows the project accessibility map.

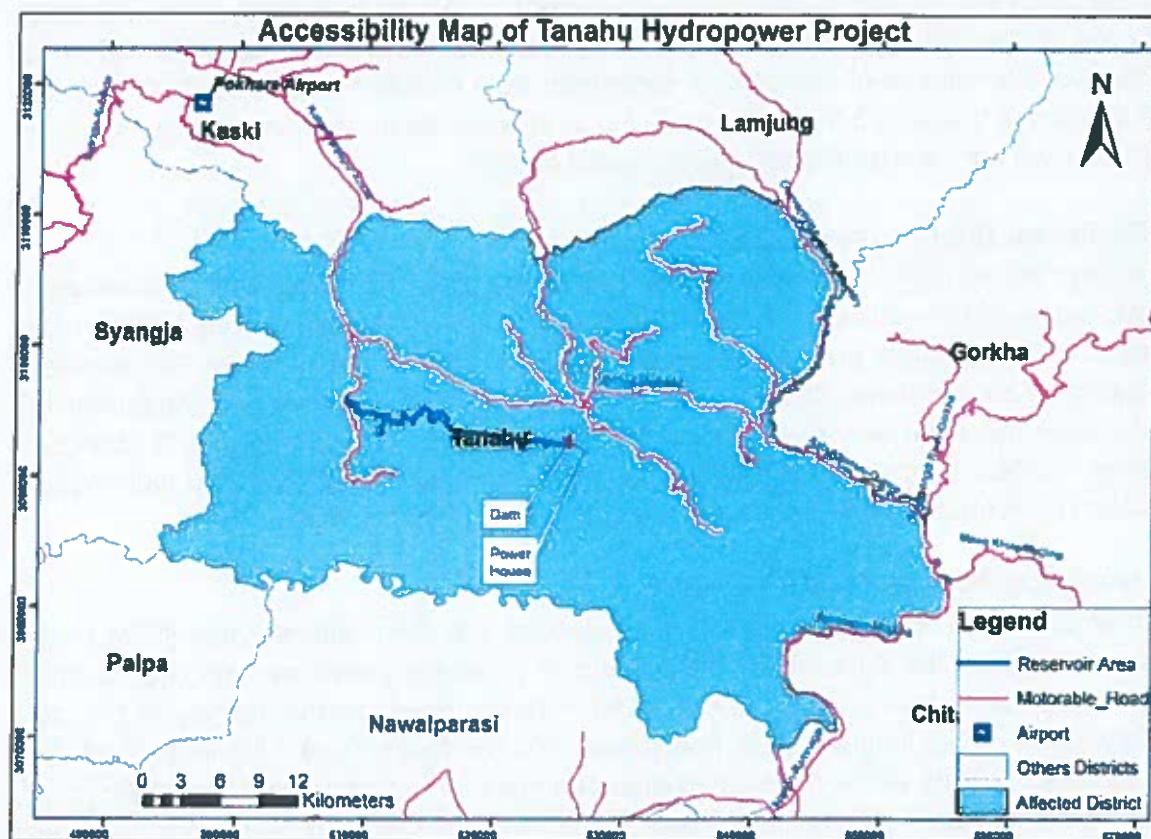


Figure 2-3: Accessibility Map of the Project

2.4 Salient Features

There have been some modifications in the project design in order to improve the efficiency of the energy output. These changes are discussed in the following sections.

2.4.1 Reservoir

A reservoir with a total surface area of 7.256 km² at full supply level (415m) will be created. The MOL of the reservoir is lowered to elevation 378m instead of 387.2m in the feasibility study, providing a 37m available drawdown (fluctuation zone) between MOL and supply level (FSL). The total storage volume of the reservoir as FSL will be 295.1 million cubic meter (MCM), with 192.8MCM (or 65.3%) effective storage during the first 10 years of operation and 181.7MCM (or 62%) from the 11th year onwards which was 167MCM in previous feasibility study. The increase in volume is due to lowering of the MOL and there will not be additional environmental impact.

2.4.2 Diversion tunnel

The length of the both the diversion tunnel has decreased from 712m 1st, 881m 2nd to 556m 1st, 622m 2nd. This is due to the change in location of inlet and outlet. There will be no additional environmental impact from the shortening of the tunnel.

2.4.3 Dam gates and spillway

The dam gate and spillway design has been modified, based on hydraulic modelling. Gate design now reflects the reduction from six gates to three gates, to reduce the distance between the retaining walls (i.e. to prevent overtopping) at the base of the spillway, with each gate increased in size to 16.5m width by 18.1m height. One gate is located on the left bank side and two on the right bank side. The length of crest of the dam is increased from 170m to 175m however the volume of the dam is decreased from 870000m³ to 806000m³ and the width of spillway is decreased from 75m to 49.5m to improve discharge. This change in no. of spillway types will not have additional environmental impact.

2.4.4 Sediment flushing facilities

These facilities will consist of two sets of inlets through the base of the dam wall, in the middle of the river cross-section, with a sill level of 320 masl or lower. Gate size is likely to be 5m by 5m which is the largest gate that can be readily manufactured for this purpose. The facilities will be designed to discharge 400m³/s under open channel flow conditions, adequate to handle the peak monsoon river flow, 70% of the time. The type of intake for this is changed from a single surface intake with invert elevation of 371.6 masl to a single tower type intake with elevation at invert 362 masl. This change is from the optimization study.

2.4.5 Headrace, Penstock and Tailrace

A 7.4 m diameter and 1162m headrace tunnel (Approved EIA, 7.8m diameter and 927m long) will be constructed on the right bank. The change in headrace tunnel as compared to the approved EIA is due to the change in the location of power house as the geology of the old location is weak. A 175m long penstock that divides into two (going from 7.4m in diameter to 2x3.1m diameter) near its end is redesigned after changing from a 7.8m diameter, 195m long penstock. The length and diameter of tailrace tunnel are reduced from 320m to 117m and 8.2m to 7.4m respectively. A draft tunnel of 85.8m is designed.

2.4.6 Powerhouse

An underground powerhouse will be constructed 6km downstream of the dam (beyond the confluence with the Madi Khola). Two units of vertical axis Francis turbines, three phase synchronous generator and transformer will be installed. The powerhouse dimensions are 27m wide by 46m high by 97m long which was 22m wide by 42m high by 90m long previously.

2.4.7 Surge tank

After optimization of 3.7m diameter at orifice and 17m diameter at chamber a headrace surge tank with 3.6m diameter at orifice and 18m diameter at chamber will be used.

2.4.8 Middle outlet

Two middle outlets have been included in the dam to enable the reservoir level to be lowered from MOL (378masl) to a height that allows the sediment flushing gates to be opened. The sediment flushing gates can only be opened when the maximum operating head is 25m, equivalent to the reservoir level design consideration is the reduction in the possible impacts of

rapid flow releases on downstream area. Each middle outlet will consist of a conduit through the dam wall with an intake gate 3.8m by 3.8m with a top invert level of 341.8 masl. The reservoir is expected to be at MOL (378 masl) in most years when the middle outlet is opened, it is likely that the middle outlet discharge rate will be 710 m³/s or less through this outlet.

2.4.9 Turbine

Vertical Axis Francis turbine is used which consists of two units. The rated design discharge is 127.4 cumecs and rated effective head to run the turbine is 111.4m. The installed capacity of the plant is 140MW which was 127MW in the feasibility study. The increase in capacity is due to the increase in turbine output.

2.4.10 Road Alignment

The purposed road alignments have been improved, to reduce the environmental and social impacts of these structures. The project will pave the existing main village access roads as a community development initiative.

2.4.11 Total Energy Generation

The total energy from the plant will be 585.7GWh for the first 10 years which was 607GWh in the approved EIA report. This change is due to the change flushing schedule.

2.4.12 Spoil disposal and project facilities

An estimated 1.359MCM excess spoil materials (rock, gravel) will require disposal. Five disposal areas, with a total capacity of 3.252MCM, have been identified in relatively close proximity to the project sites. Modelling of the upstream river depth increases has been done, to determine the appropriate spoil disposal sites that will not result in a potential rise the river water level (which could cause downstream riverbank erosion or flood).

The following table summarizes the changes in the salient features of the project with respect to the approved EIA report.

Table 2-2: Salient Features of THP

S N	Salient Feature	Previous (As per Approved EIA)	Present (S-EIA)	Remarks
1	Name of the Project	Upper Seti HEP	Tanahu Hydropower Project	The project has been handed over to THL-A subsidiary company of NEA in 2012.
2	Type of Project	Reservoir	Reservoir	No change
3	Project Location			
	Province	-	4	After restructure of local bodies
	Project Zone	Gandaki	Gandaki	No change
	Districts	Tahanu	Tanahu	No change
	VDCs	Kahu Shivpur, Jamune, Rising Ranipokhari, Kot Durbar, Chhang, Majhkot, Bhimad, Pokhari Bhanjyang	Kahu Shivpur, Jamune, Rising Ranipokhari, Kot Durbar, Chhang, Majhkot, Sabung Bhagawatipur, Bhimad	Sabung Bhagawatipur VDC, Pokhari Bhanjyang VDC merged into Byas Municipality

S N	Sallient Feature	Previous (As per Approved EIA)	Present (S-EIA)	Remarks
	Municipality	Byas	Byas	No change
4	Dam			
	Type	Concrete Gravity	Concrete Gravity	No change
	Height	140m	140m	No change
	Length at crest Level	170m	175m	Increased by 5m
	Crest width	6.6m		
	Spillway type	Chute type gated	Chute type gated	No change
	No. of radial gates in spillway	6	3	Decreased to improve discharge
	Width of the overflow crest in spillway	75m	49.5m	Decreased to improve discharge
5	Diversion Tunnel			
	No	2	2	No change
	Length	1 st : 712m 2 nd : 881m	1 st : 556m 2 nd : 622m	Decreased
6	Reservoir			
	Area	7.26km ²	7.26km ²	No change
	Length	18km	18km	No change
	FSL	415m	415m	No change
	Minimum Operation Level	387.2m	378m	MOL lowered by additional 9.2m
	Gross Storage Capacity	295.1MCM	295.1MCM	No change
	Effective Storage Capacity	167MCM	192.8MCM first 10 year and 181.7 MCM after 10 years	
	Seasonal Water Level Fluctuation	27.8m	37m	Increased by 9.2m
7	Intake	A single surface intake, Invert elevation 371.6m asl	A single tower type intake	No change
8	Headrace Tunnel			
	Length	927m	1162m	Increased due to change in Powerhouse location
	Diameter	7.8m	7.4m	Decreased to optimize the size
9	Penstock			
	Length	195m	175m	Decreased due to headrace tunnel position
	Diameter	5m to 3.1m	7.4m to 3.1m	Increased to optimize size
10	Powerhouse			
		Underground	Underground	No changed

S N	Salient Feature	Previous (As per Approved EIA)	Present (S-EIA)	Remarks
	Length	90m	97m	Slight changed
	Height	42m	46m	Slight changed
	Width	22m	27m	Slight changed
11	Draft tunnel			
	Length		85.8m	new component
12	Tailrace tunnel			
	Length	320m	117m	Reduced by 203m
	Diameter	8.2m	7.4m	Reduced by 0.8m
	Tail water Level	289.2m	289.2m	No change
13	Turbine			
	Design discharge	Max, Discharge 127.4 cumec	Rated 127.4 cumecs, Max, 131.2 cumecs	No change but flexible
	Effective Head	Rated 113m	Rated 111.4m, Max, 121.55m	No change but flexible
	Type	Vertical Axis Francis	Vertical Axis Francis	No change
	Unit	2 units	2 units	No change
	Installed Capacity	127MW	140MW	Increased by 13MW
14	Total Energy	607GWh	First 10 years 585.7GWh	Changed due to silt flushing
15	E-Flow	2.4 m ³ /s	2.4 m ³ /s	No change
16	Rural Electrification in Project Vicinity Area			
	Package 1	Rural electrification shall be carried out	Construction of Jaruwa -Dharampani 33 kV sub-TL and Damauli-Maghkot 33 kV sub-TL of estimated length 24km each	Rural electrification is a part of the project under the CSR policy and also mentioned in approved EIA, to provide electricity to the people of project affected VDCs.
	Package 2		Construction of <ul style="list-style-type: none"> 33/11 kV, 6/8 MVA substation at Dharampani with four 11kV feeders. 33/11kV, 7.5 MVA substation at Maghkot with four 11kV feeders. 	
	Package 3		Construction of 11kV distribution feeders, installation of pole mounted distribution transformer, construction of low voltage distributor line	
	Cost Estimate	NRs. 19.55 Million	USD 10.001 million (excluding land acquisition cost for 33/11kV substation)	
17	Construction Power	3km long 33kV sub TL from Damauli substation up to Jhaputar and 6/8 MVA S/S at Jaruwa	3km long 33kV sub TL from Damauli substation upto Jhaputar and 6/8 substation at Jaruwabstation upto Jhaputar and 6/8 MVA substation at Jaruwa	No change
18	Project Construction Period	5 years	5 years	No change
19	Project Cost	505 million USD	505 million USD	No change



3 STUDY METHODOLOGY

The S-EIA process followed the Environmental Protection Rules (EPR), 2054 (Fifth Amendment), Environmental Protection Act (EPA), 2053 and National EIA Guidelines, 1993. This S-EIA is prepared in accordance with the legal requirements of GoN, based on field studies and consultation with the local people and officials.

As such no new methods were adopted while carrying out S-EIA in comparison to the methods adopted while carrying out in approved EIA. In case of vegetation study, unlike the approved EIA, the census data obtained from the tree numbering/counting of the community forests of the reservoir area was used. This, in fact, gave the precise number of the trees to be removed from the community forests in the reservoir for the project construction. Other methods adopted were field studies and public discussions.

A public hearing was conducted at the project site. A public notice was published on the local newspaper seeking the participation of stakeholders in a public hearing program for obtaining their opinion and suggestions regarding the outcomes of the S-EIA of the THP. The overall study methodology was guided by the EPR, 2054 (Fifth Amendment). The details of the public hearing is described in Chapter 8. The following methodology has been used to collect the baseline data on each environmental domain:

- Collection of secondary data and review (Desk Study)
- Field survey and investigation by the team of experts
- Observation
- Group Meetings
- Expert's judgments

3.1 Desk Study

The methodology for the S-EIA mainly relied on the desk study. Since, there was no change in the project location or design and it was simply because of increased efficiency of turbine output, the generation of the project increase from 127MW to 140MW, extensive desk study was carried out. The approved EIA of the project was reviewed extensively and other documents were studied to obtain information of the following environment;

3.1.1 Physical Environment

Review of approved EIA report of Upper Seti HEP (127MW), Feasibility Report of Upper Seti HEP and other pertinent literatures was done. Topographical (Table 3-1) and land use maps of the area including the Google Earth map were studied for field study. Information on climate, geology and hydrology were taken from the Feasibility Report as well as from the approved EIA of the project. Review of topographical map and land use map was done to identify the land use patterns of the area. The details of different topographical maps used during the study period are given in following table.

Table 3-1: Topographic Maps of Project Area

S. N.	Name of Topographic Sheet	Sheet No.	Scale
1	Bhimad Bajar	278401a	1:25000
2	Naya Risin	278401b	1:25000
3	Damauli	278402a	1:25000



Land use pattern of the study area was derived from review of topographical map, Google Image, GIS map of the area and approved EIA report. The geology around the project area highlighting geology has been covered in the S-EIA report, as per the available information in the Feasibility Report and approved EIA report.

3.1.2 Biological Environment

The general information of the forest area, types, community forest of the district was collected by review of publication of District Forest Office of Tanahu. The wildlife information was collected by review of existing literature on birds and mammals as well as the approved EIA report. The census data of the tree loss in the reservoir area was reviewed in order to assess the impact on the biological environment.

3.1.3 Socio-economic and Cultural Environment

Socio-economic and cultural data, such as population of project district and VDCs, household size, male - female ratio, infrastructures, ethnicity, religion etc. were derived from Population and Housing Census, 2011 published by Central Bureau of Statistics (CBS). District Profile and profiles of the affected VDCs were reviewed for the required socio-economic data.

On the basis of the reviewed information with respect to the project, data gaps were identified and the methodology described in following sections of this chapter was developed to collect other relevant information required for S-EIA.

3.2 Field Investigation

A team of experts specialized in environment, engineering and socioeconomics visited the project area from Baishak 13 to 24, 2073 to collect information of the area, identify the likely impacts of the proposed project during construction and operation phases due to change in project layout and inform stakeholders regarding such changes in the design of the project.

3.2.1 Physical Environment

The stability of slopes and the presence of landslides, fan deposits and rock fall within the project area were evaluated mainly by site observations and from topographical maps. The local people were enquired about the occurrence of major landslides and soil erosion in the project area if any. During the field visit the data on occurrences of slides and other information related to the physical environment were gathered by observation, group discussion and inquiring the local people.

3.2.2 Biological Environment

No forest sampling was carried out since the forest census of the project area was already completed by the district forest office of Tanahu. During this visit, the team visited the project site and collected required data on biological environment.

3.2.3 Socio-economic and Cultural Environment

Since there was no structural change in the project design, the study team focused on public consultation concentrating on the impacts due to change in generation capacity of the project. During this visit, the team visited the project site proposed for structures and facilities as well as settlements of the affected VDCs and collected required data on socioeconomic and cultural environment of the area. The study team has adopted a participatory approach with

maximum involvement of different stakeholders of the project at the local and district levels to generate relevant information for the S-EIA. No household survey was carried out as there is no change in the baseline of the project affected people.

3.3 Public Involvement/ Consultation

3.3.1 Consultation during S-EIA

From Baishak 13 to 24, 2073, as part of the S-EIA fieldwork, extensive consultations were made with the stakeholders by the study team. This included in-depth interviews with key stakeholders in the project area and informal meetings with local and district-level stakeholders (CFUGs, GoN line agencies, etc.). The main issues and concerns of the stakeholders have been incorporated in the public involvement/consultation chapter (Chapter 8) of this report. The list of participants in the group meetings is given in Appendix B.

3.3.2 Public Hearing

A public hearing was conducted in project area as per the provision of EPA/EPR, 1997 and Guidelines for S-EIA, 2015. Public notice regarding the public hearing was published in local daily newspaper. The program was also broadcasted through local FM radio station. Request letters for participation in the public hearing were sent to concerned ministries and departments and receipt of the notice receive shall be collected. Details about the public hearing is described in Chapter 8. The recommendation letters of affected VDCs/Municipality were collected (Appendix D).

3.4 Study Team

The following personnel were involved during the S-EIA of the THP:

Table 3-2: Experts involved in S-EIA Team

S. N.	Name	Designation	Address	Phone No.
1	Rabindra Prasad Chaudhary	Department Chief, (Coordinator)	NEA-ESSD	01-6611580
2	Rajan Rishi Kadel	Joint Director, (Sociologist)	NEA-ESSD	
3	Prakash Gaudel	Asst. Manager (Environmental)	NEA-ESSD	
4	Krishna Prasad Joshi	Asst. Director (Database Expert)	NEA-ESSD	
5	Nagendra Mulmi	Civil Engineer	NEA-ESSD	
6	Anup K.C.	Environmental	NEA-ESSD	

Beside the aforementioned study team, experts from the project were also involved in providing the project's technical data/facts and figures and suggestions for the preparation of this S-EIA report. Enumerators and field helpers were hired at the local level to assist the study team in collecting baseline on each environmental domain and other necessary field data.



4 EXISTING ENVIRONMENTAL CONDITION

The following sections outline the baseline conditions for the physical, biological and socio-economic and cultural environments of the project impact area.

4.1 Physical Environment

4.1.1 Watershed and Drainage Condition

The THP is located in the Gandaki River Basin and total catchment of the basin up to the intake site is 1502km² of which about 129km² is covered with snow. The project catchment consists of two physiographic regions, namely the High Himalayas and the Lesser Himalayas. The catchment is located in the eastern region between latitudes 27°45'00"N and 28°30'00"N and between longitudes 84°00'E and 85°00'E. The project site itself is located in the Lesser Himalayan Physiographic Region, which is classified as a sub-tropical region. The project includes a reservoir extending upstream to the Seti River. The River is the major River which drains the project area. *There are no any significant changes in watershed and drainage condition as compared to the approved EIA report.*

4.1.1.1 River System

The total length of the Seti River from the dam site to the source is about 120km. The main stem of the Seti River drains the southern flank of the Higher Himalayan range and the central part of the catchment. At the upstream of the dam site, the river meets many small tributaries like Jyamdi, Kynadhi, Saraudi, Khudi, and Yangdi Khola. At the upstream of the Pokhara valley, the river meets Mardi Khola at Lahachowk. The gradient of the Seti River upstream of the Mardi and Seti confluence is steep. At about 2km downstream of the proposed dam site, the Madi River a major tributary joins the Seti River. The river flows in a narrow gorge almost all along the reservoir stretch except at the end of the reservoir in Bhimad Bazaar, where the river spreads out to form sand beaches. *There are no any significant changes in rivers and its rivulets as mentioned in the approved EIA report.*

4.1.1.2 Physiographic Region

The Seti River basin may be divided into two physiographic regions as High Himalayas and Lesser Himalayas. *The physiographic description of the project area is same as mentioned in approved EIA.*

4.1.1.3 Watershed in the Immediate Project Impact Area

The watershed of the Seti River is relatively stable around the impact area mostly along the reservoir stretch, the area along the reservoir area like Bhimad Bazaar and along the tributary of the Wanten Khola is geologically weak. The surface geology of these critical areas appear to be weak and mainly consist of cemented gravel with sandy to silty matrix. These layers are permeable and a big escarpment is observed along the riverbank, which indicates the risk of collapse of the riverbank. The erosion process in these areas is more pronounced in the monsoon season. The formation of the reservoir and fluctuation of the water level will further aggravate the risk of bank collapse. The critical areas are mostly found in places like Bhimad Bazaar, Chore Patan and along Wanten Khola. Extensive cultivation is being done in these places, especially along the river banks. The topography of the access road is steep and stable with natural vegetation cover. The watershed downstream of the dam site is relatively stable. No major slides were seen in the downstream sections. The river Madi joins the Seti River at 12.0 km downstream of the dam site. The river expands to form sand beaches at the end

of the reservoir and along the dewatered section. The watershed of the access road is stable and consists of steep area covered with forest. *These all are mentioned in approved EIA and there are no any significant changes in SEIA as compared to approved EIA report.*

4.1.2 Topography and Land use

The core project area lies in the hilly region with mild undulations. The altitudinal variation of the project area ranges between 450 and 300m and the dam site is located at a very narrow section of the Seti River, where the left and right banks are vertical. The width of the river at the dam site is approximately 30m and these are mentioned in approved EIA report which are same in SEIA report. In the approved EIA report, it is mentioned that the land use in the project area, especially in the reservoir is mainly forest and patches of fertile agricultural land, especially at the end of the reservoir. The initial stretch of about 8km of the reservoir lies through a narrower region with steep slopes on both banks. The latter part of the stretch runs through a wider area consisting of agricultural land, especially in Risingpatan, Saune and Bhimad villages. Extensive cultivation is being done in these places especially along the river banks. Sand bars and boulder deposits were also seen at the latter stretch of the reservoir. *These all are almost same in S-EIA report.*

The underground powerhouse is located at the right bank of the Seti River about 2km downstream from the dam which is *slightly shifted from the location proposed in approved EIA*. Landuse of the project area and the proposed disposal sites are shown in Table 4-1 and Table 4-2 respectively.

Table 4-1: Landuse of Land required for the project

S.N.	Land use	Land take (ha)		Total Land Take (ha)
		Reservoir (FSL 415+10m)	Project Facilities	
1	Forest	353.9	69	422.9
2	Cultivated	69.36	54.28	123.64
3	Barren Land	268.39	31.985	300.375
4	River and Flood Plain	208.5	18.09	226.59
5	Built Up/Residential	0.85	0.655	1.505
	Total	901	174.01	1075.01

Source: Approved EIA, 2009; THP, field study, 2016

The location and area of muck disposal sites are finalized so the total area for project facilities is changed in S-EIA as compared to approved EIA which is shown in Table 4-2.

Table 4-2: Existing Land use of the Proposed Disposal Sites

Land use	Area of Sites (ha)					Total Area (ha)	Remarks
	I	II	III	IV	V		
Forest	-	0.3	-	-	-	0.3	Muck disposal sites of area 41.01ha are finalized and added in S-EIA
Shrubs	-	-	4.42	0.91	2.18	7.51	
Sand	0.31	6.9	3.07	2.18	1.06	13.52	
Cultivation	11	2.29	1.46	0.08	4.17	19	
Built Up	-	-	-	0.27	0.14	0.41	
River	-	0.27	-	-	-	0.27	
Total	11.31	9.76	8.95	3.44	7.55	41.01	

Source: Approved EIA, 2009; field study, 2016



4.1.3 Climate, Meteorology and Air Quality

The catchment of the Seti experiences severe cold, subtropical to temperate climate. The average maximum temperature in the project area is 28.4°C and the minimum temperature is 16.8°C. A typical temperature record for the year 2010 to 2014 from meteorological station at Damauli is given below.

Table 4-3: Temperature at Damauli Station

Year	Air Temperature (°C) Absolute		Yearly Rainfall (mm)
	Maximum	Minimum	
2010	35.8	8.5	1880
2011	34.9	7.5	1645
2012	36.2	8.3	1572
2013	35.6	7.9	1919
2014	38.0	9.4	1267

Source: District Profile of Tanahu (2072 B.S.)

4.1.4 River Hydrology and Morphology

In approved EIA report, it has been mentioned that the Seti basin has a catchment area of 1502km² at the dam axis. The annual average flow in the Seti River has been estimated by considering the data from two stations 430 and 438. The mean annual run-off has been estimated as 107.21m³/s which is about 3335 million m³ a year. There is no other significant change in river hydrology and morphology as compared to the approved EIA report.

4.1.5 Geology and Soil

The project area belongs to the midland metasedimentary units of the Lesser Himalayan Zone represented by Dhading Dolomite, Benighat Slates and Nourpul Formation comprising of dolomite, slate, phyllites, quartzite, dolomitic quartzite, quartzitic phyllite and calcareous phyllite. Geology and soil of project area including dam, reservoir, intake, diversion tunnel, penstock, powerhouse, tailrace tunnel and spillways are same so there are no changes in this S-EIA report. Figure 4-1 depicts the location of the THP in the geological map of Nepal.

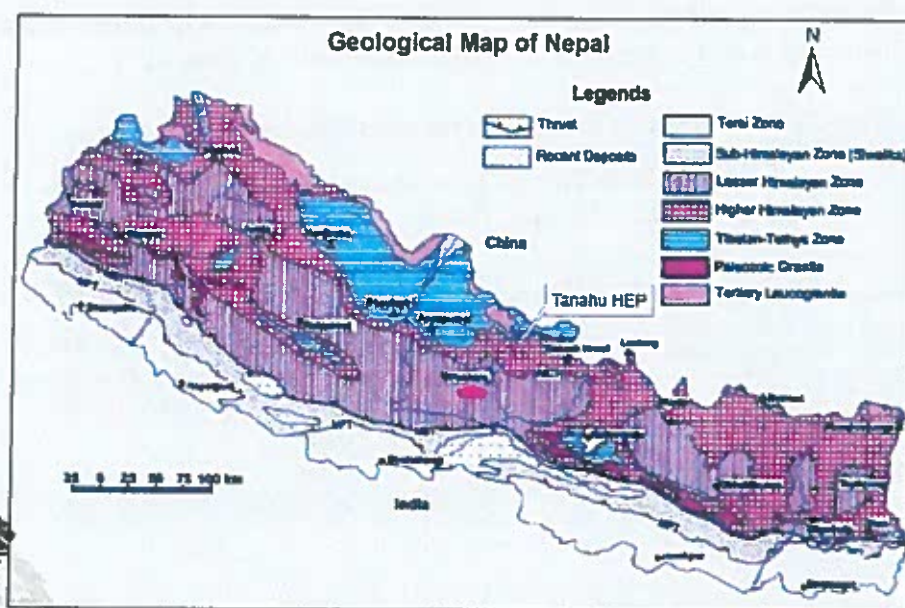


Figure 4-1: Geological Map of Nepal Showing the Project Location

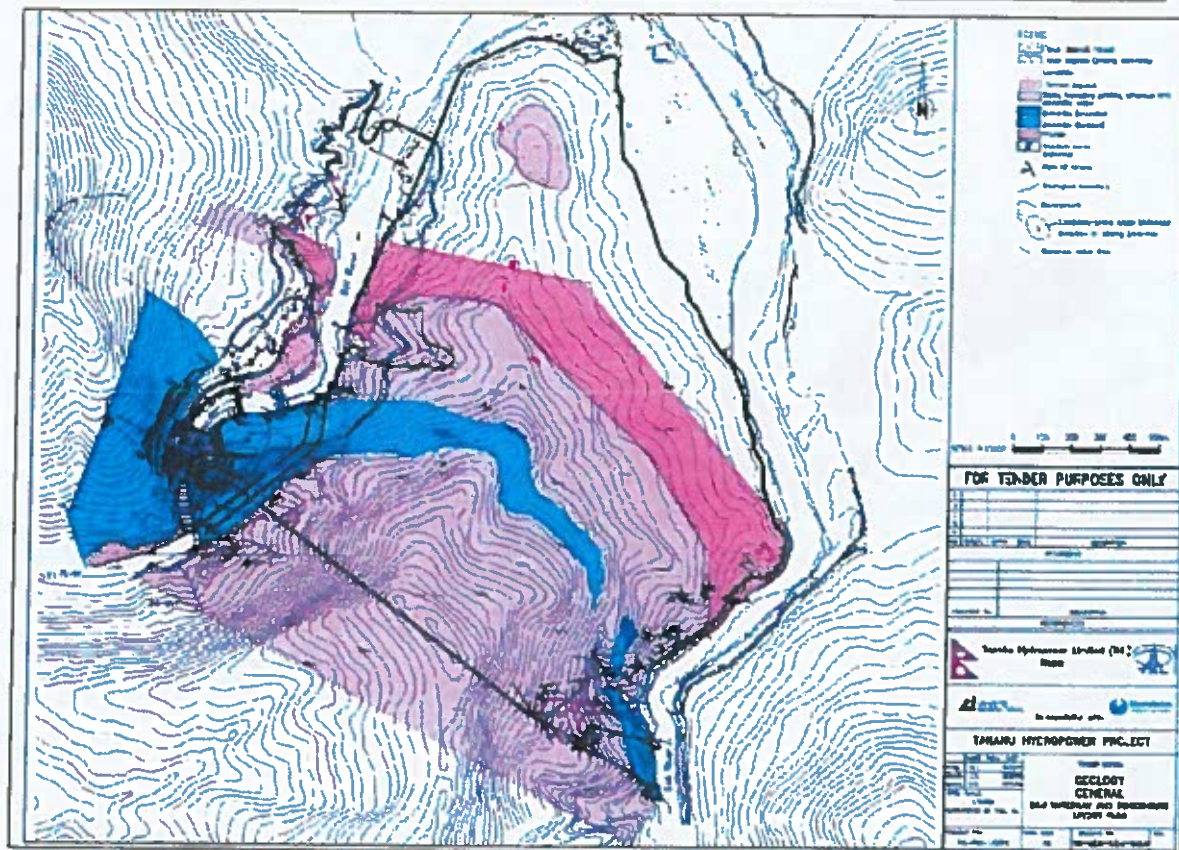


Figure 4-2: Local Geological Map of the Project Area

4.1.6 Seismicity

Nepal is located at the conjoint of two converging plates; the Indian plate to the south and the overriding Eurasian plate to the north. A significant amount of the convergent component of plate motion is accommodated within Nepal resulting in the crustal velocities changing from a northeast trend in Northern India to an east-northeast trend in southern Tibet. Due to the regular convergence of these plates Nepal has been subjected to a series of great earthquakes including the 25th April 2015 of magnitude 7.8 Gorkha earthquake. This project is situated in seismic zone factor of 1 which is not good from the seismic point of view but as a whole of country Nepal, it is satisfactory that this alignment does not pass through the most vulnerable seismic zone. During the field visit it is observed that there are not such changes in geology, soil etc. of project area due to Gorkha earthquake. As per Technical Memorandum No.7, Seismic Hazard Assessment of Seti River Dam Site, The Tanahu project site has a similar geometric relation to the Himalayan megathrust as the city of Kathmandu. In the M7.8 Gorkha earthquake of 25 April 2015, which ruptured along this thrust north of Kathmandu, the accelerations in the capital were very low. Eight out of twelve strong motion records in the Kathmandu area showed Peak Ground Acceleration (PGA) <0.1g, and none exceeded 0.2g. This suggests that possible PGA values at Tanahu should also be low. Seismic zonation map of Nepal along with the project location is given below.



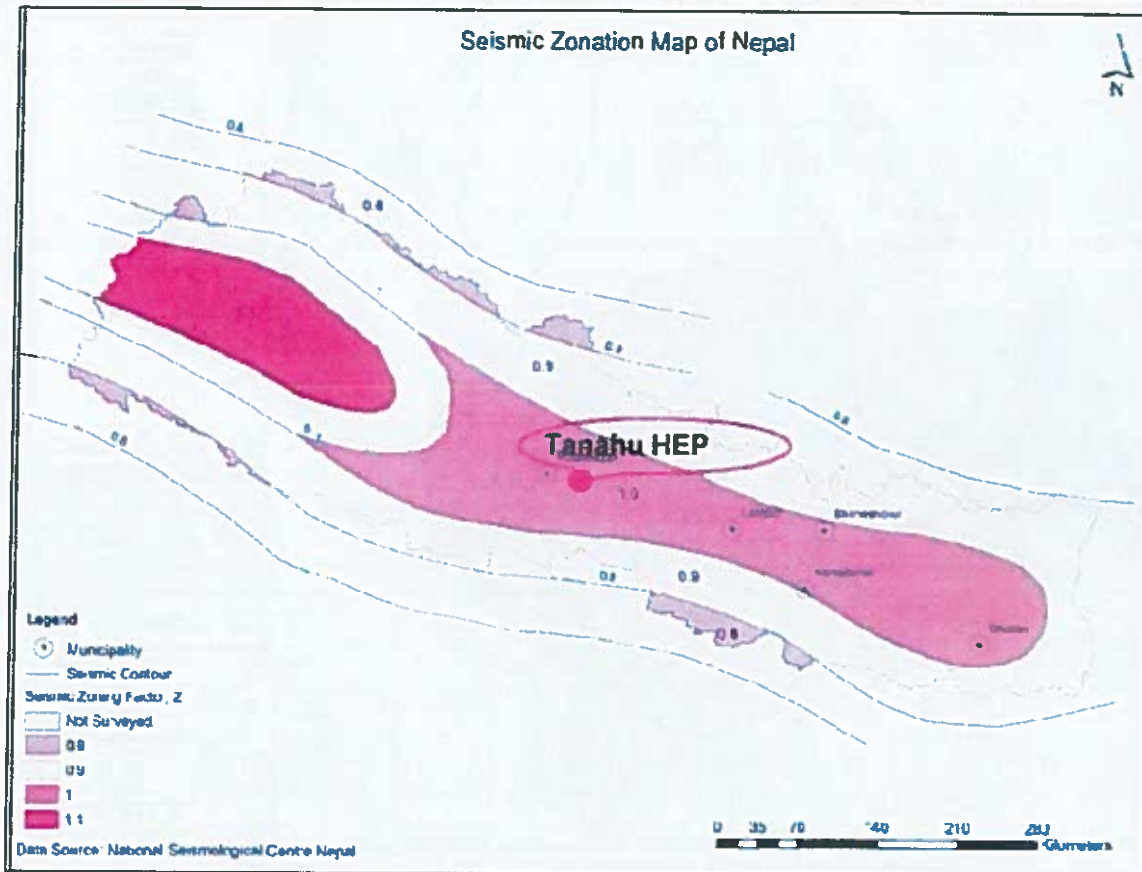


Figure 4-3: Seismic Map of Nepal with the location of the Project

4.1.7 Water Quality

There is no change in water quality as compared to approved EIA report.

4.1.8 Noise Quality

The dam site and the power house site are located in the interior rural setting of the Tanahun District. There is no industry or road traffic in the immediate project area and therefore there is no noise pollution in the core project area. So, there is no change in Noise quality as compared to the approved EIA report.

4.2 Biological Environment

4.2.1 Vegetation

There are no remarkable changes in the vegetation and its composition on both sides of the river. The vegetation is more or less the same. The forest, is very sparse from Geruwatar along the right bank up to Bhimad, while forest is conserved up to Jhakkas on the left bank, is mentioned in the approved EIA. The right river bank has a higher biodiversity value than the left bank due to the presence of threatened plants such as wild varieties of banana (*Ensete glaucum*) and Screw pine (*Pandanus nepalensis*).

The proposed area is a part of the Central Nepalese Biogeographic Region (Dobremez, 1976). However, the area, from altitudinal consideration, is a part of the Upper Tropical Eco-Zone (300 to 1000m), have forests vegetation characteristics of the Lower Tropical Eco-Zone (70 to 300m) in the deeply entrenched river gorge of the Seti River. The Sal forest, a component of

the Upper Tropical Eco-Zone is well developed in the higher elevations of the Seti gorge (above 100m from the valley floor), whereas in the river bottom and on the gorge flanks Mixed Open Forest with patches of Khair (*Acacia catechu*) forests are present which have characteristics of the Lower Tropical Eco-Zone. *There is no significant change in vegetation than as mentioned in the approved EIA.*

4.2.1.1 Forest Types

There is no difference in the vegetation composition of the forest in the project area along the Seti River. The following types of forest were recorded in the project area in the Approved EIA report:

- Hill Sal Forest

Shorea robusta (Hill Sal) is the dominant species, which is normally observed above EL.400 m. The associates of this forest are *Schima wallichii* (Chilaune), *Lagerstroemia parviflora* (Botdhyero), *Bauhinia vahlii* (Bhorla) and *Desmodium oojeinense* (Sadan) etc.

- Mixed Open Forest

This forest type is spread along the river belt. Representative species are different depending upon the aspect of the hill. *Terminalia alata* (Saj), *Mallotus philippensis* (Sindhure), *Albizia chinensis*, *Albizia lebbeck*, *Sapium insigne* (Khirro), Bamboo sp., *Lagerstroemia parviflora* (Botdhyero), *Bauhinia vahlii* (Bhorla) and *Desmodium oojeinense* (sadan) are commonly found in this forest area. Other associates are *Murraya koenigii*, *Leea macrophylla* and *Dioscorea bulbifera*.

- Khair/Sisso Forest

Acacia catechu (Khair) is the representative species of this forest area. It is mostly found just at the side of the rich alluvial deposits along the Seti River. The associate species of this forest is *Bombax ceiba* (Simal), *Dalbergia sisoo* (Sisoo), *Sapium insigne* (Khirro), *Murraya koenigii* and so on. The Khair forest is threatened due to fewer seedlings in the area as well as due to high usage. *Dalbergia sisoo* (Sisoo) is mostly planted associated with wild Khair.

4.2.1.2 Community Forest and Private Forest

In the approved EIA, there are nine community forest (CF) in the reservoir area and project facilities sites however during the tree counting number of community forest increased to 25. This increase in number is based on the census of the trees to be felled down within the reservoir area and project facilities sites carried out by the district forest office of Tanahu in coordination with the THL. The details of the CFs are presented below:

Table 4-4: Changes in the CFs in the Reservoir Area and project facilities sites

S. N.	As per Approved EIA		Supplementary EIA		Remarks
	Name of CF	VDC/ward	Name of CF	VDC/Municipality*-ward	
1	Sisneri Tapu	Bhimad	-	-	Omitted
2	Banchare Danda	Chhang	Banchare Danda	Chhang-8	No Change
3	Sangu Pokhara	Chhang	Sangu Pokhara	Chhang-8	
4	Bhadaure Danda	Rising Ranipokhari	-	-	Omitted
5	Ghumaune Danda	Rising Ranipokhari-9	Ghumaune	Rising Ranipokhari-9	No Change
6	Shidhabatasan	Jamune-6	Shidhabatasan	Jamune-6	
7	Bansghari	Rising Ranipokhari-1,2	-	-	Omitted
8	Bajar Thumki	Kot Durbar-7	Bajar Thumki	Kotdurbar-7	No Change

9	Salbas	Kahun Shivapur-1	Salbas	Kahun Shivapur-1	No Change
10	-	-	Beltar	Kahun Shivapur-1	Added
11	-	-	Bachyanggauda	Jamune-1	"
12	-	-	Posh-Barahi	Jamune-1	"
13	-	-	Posheli	Jamune-2	"
14	-	-	Barchyang	Jamune-3	"
15	-	-	Jangtuyang	Jamune-5	"
16	-	-	Umachowk	Jamune-8	"
17	-	-	Bhirpani	Kotdurbar-1	"
18	-	-	Aahale	Kotdurbar-2	"
19	-	-	Chandi Bhayer	Kotdurbar-7	"
20	-	-	Jure Pahad	Kotdurbar-7	"
21	-	-	Chulidada	Chhang-2	"
22	-	-	Jinkot	Channg-4	"
23	-	-	Dada	Chhang-4	"
24	-	-	Choketar	Chhang-7	"
25	-	-	Bhotchuli	Chhang-7	"
26	-	-	Phulbari	Rising Ranipokhari-7	"
27	-	-	Chanakhre dada	Byas*-7	"
28	-	-	Manung	Chhang-2	"
			Chandi Devi		

4.2.1.3 Ethnobotany

An ethno botanical survey during EIA and field study during S-EIA, revealed that the Magars who reside in the local community in the study area have rich indigenous knowledge of wild plants. They utilize the plants for various purposes such as medicine, food, timber, fermentation material, fish poisoning etc. The detail wild plants used by local people for various purposes is given in Table 4-5.

Table 4-5: Wild plants used by local people for various purposes

S.N.	Uses	Plant Species/Local name	Scientific name
1	Timber	Sal, Chilaune, Saj, Khayer	Shorea robusta, Schima wallichii, Terminalia spp. Acacia catechu
2	Fuel wood	Chilaune, Katus, Guyalo, Bhalayo, Jamun, Camuna etc.	Schima wallichii, Castanopsis spp. Rhus succedanea, Syzygium cumini
3	Fodder Foliage	Amliso, Gaujo, Thodne, Dhayaro, Sal, Phurke, Thulokhari, Khaniyo, etc.	Thysanolaena maxima, Shorea robusta
4	Edible	Niuro, Kafal, Bhakyur, Tarul, Chayu, Pidalu, Siplighan, Koiralo, Sisnoo,	Fiddlehead Fern, Myrica esculenta, Basidiomycota, Agaricomycetes, Urtica dioica, Bauhinia, Colocasia esculenta



4.2.1.4 Conservation Status of Plants

There is no significant change in conservation status of plants than as mentioned in the approved EIA. Out of total record of 209 wild plants in the project area in the approved EIA, 3 plants fall under the Nepal Government conservation categories, 6 (including 4 orchids) under CITES conservation categories and 6 plant species are under IUCN conservation categories. Plants found inside the project area which fall into different conservation categories are presented in Table 4-6. Government of Nepal has imposed restriction on the export of a number of plant species in unprocessed condition. Sal (*Shorea robusta*), Khayer (*Acacia catechu*) and Simal (*Bombax ceiba*) are the species available in the project area banned for commercial felling, transportation and export as per the Forest Rules, 1995.

Table 4-6: Plants of Project Sites under Different Conservation Categories

SN	Plant Species	Status		
		CITES	IUCN	Forest Rule 1995
1	<i>Acacia catechu</i> (L.f.) Willd.		T	P
2	<i>Alstonia scholaris</i> (L.) R. Br.		R	
3	<i>Dioscorea deltoidea</i> Wall. Ex Grises	II	T	
4	<i>Oroxylum indicum</i> (L.) Kurz.		V	
5	<i>Rauvolfia serpentina</i> (L.) Benth.	II	E	
6	<i>Shorea robusta</i> Gaertn.		E	P
7	<i>Bombax ceiba</i>			P

Source: Approved EIA, 2009

4.2.1.5 Plant Biodiversity

Due to the difficulty of access and complex geography, the forests on the steep slopes along the Seti River are disturbed to a very little extent and a rich biodiversity is maintained, especially, in the lower reservoir area. Floristic exploration in the project area reveals 209 wild flowering plant species. The approved EIA has enumerated highest number of herbs (69 spp.) followed by trees (62 spp.), shrubs (53 spp.) and climbers (25 spp.).

4.2.2 Wildlife

The THP area lies in the middle mountain physiographic region of the country. Smaller patches of forests do not support diverse species of wild life in the project area. However, 27 species of wildlife, 62 species of avi-fauna were reported in the project area in the approved EIA report. The distribution of wildlife species is not uniform in the project area because wildlife species are influenced by different factors such as proximity to human settlements, habitat degradation and topographical features. *There is no significant change in wildlife status than as mentioned in the approved EIA.*

4.2.2.1 Mammals

Altogether 27 species of mammals were reported from the project area during the EIA field survey. All the reported species are common in the Middle Mountain physiographic region of the country. The reported species are Rhesus monkey (*Macaca mulata*), Common Langur (*Presbytes entellus*), Malsapro (*Marten flavigula*), Jackal (*Canis aureus*), Leopard (*Panthera pardus*), Ghoral (*Nemorhaedus goral*), Ban biralo (*Felis chaus*), Fyauro (*Vulpes bengalensis*), Flying Squirrel (*Petaurista petaurista*), Squirrel (*Funalbus sp.*), Hare (*Lepus nigricolis*), Banel (*Sus scrofa*) and Dumsi (*Hystrix indica*). The natural forest habitat in the reservoir area hardly favors wildlife like ghoral. The local people confirmed frequent calls of wild animals which provides the evidences for the existence of this species around the project area. *There is no any change in the species of mammals reported during the EIA than mentioned in the approved EIA.*

4.2.2.2 Birds

The bird species found in project area were common and widely distributed in midhill throughout Nepal. Cuckoos (*Cuculus spp.*), Jungle crow (*Corvus macrorhynchos*), Gray Crowned Pigmy Woodpecker (*Dendrocopos canicapillus*) and Kalij Pheasants (*Lophura leucomelana*) are the prominent bird species reported from the area. The presence of Jungle Crow (*Corvus macrorhynchos*) and Red Billed Blue Magpie (*Cissa erythrorhyncha*) was observed during the field visit. *There is no any change in the species of birds reported during the S-EIA than mentioned in the approved EIA.*

4.2.2.3 Reptiles and Amphibians

A total of 17 reptiles and amphibian species were reported in the Project area and all were found in the lower reservoir area. The local people reported the presence of Rat snake (*Ptyas mucosus*), Green Pit Viper (*Trimeresurus graminus*), and Garden lizard (*Calotes versicolor*). The other reptiles found in the area are common lizard (*Hemidactylus flavirides*) and Monitor lizard (*Varanus bengalensis*). The presence of Frog (*Rana cyanophlyctus*) and Toad (*Bufo melanostictus*) were also noted in ditches and pools at the intake site. *There is no any change in the species of reptiles and amphibians reported during the S-EIA than mentioned in the approved EIA.*

4.2.2.4 Rare, Endangered and Threatened Species

Panthera pardus, *Presbytes entelus*, *Nemorhaedus goral* and *Varanus bengalensis* have been enlisted under CITES Appendix I while *Macaca mulata*, *Felis chaus* in CITES Appendix II and *Vulpes bengalensis*, *Martin flavigula*, and *Canis auerus* in CITES Appendix III. All these species are listed as susceptible (S) categories of NRDB status. Four mammal species having national and international significance are found in the project area. Although listed by international organizations some of these species are relatively common in Nepal. For example the Rhesus monkey and Common langur are widespread in Nepal as well as in project area. *There is no any change in the rare, endangered and threatened species of mammals reported during the S-EIA than mentioned in the approved EIA.*

4.2.3 Fish and Aquatic Life

The Seti River is one of the major tributaries of the Gandaki River System, which is both snow fed and rain fed. The gradient of the river varies considerably from section to section and differences in river morphology affect fish habitat, distribution pattern and diversity. As a consequence, a series of run, riffle and pools have been developed along the Seti course. The approved EIA report identified 23 species of fish in the Seti River. *There is no any significant change in the fish and aquatic life than mentioned in the approved EIA.*

4.2.2.1 Aquatic Invertebrates

The approved EIA report revealed the presence of 35 species of Phytoplanktons like Cyanophyceae, Cholorophyceae and Bacillariophyceae. Similarly, 13 species of zooplanktons of 3 different groups are found in the Seti River, the major groups of zooplankton recorded from the project area are consisted of Rotifers, Cladocera and Copepoda. The aquatic invertebrates including phytoplanktons, zooplanktons and aquatic found in the Seti River none have been classified as rare or endangered species. *There is no any significant change in the aquatic invertebrates than mentioned in the approved EIA.*

4.3 Socio-economic and Cultural Environment

4.3.1 Population Characteristics of the Project Area

According to the Census 2011, total population of Tanahu district is 323,288 and with 143,410 (44.36%) male and 179,878 (55.64%) female respectively. Total number of households (HHs) is 78,309 with an average size of 4.13. Details of demographic characteristics of the project affected district are given in Table 4-7.

Table 4-7: Demographic Characteristics of the Project Affected District

S.N.	Description	Tanahu
1.	Total Population	3,23,288
2.	Male	1,43,410
3.	Female	1,79,878
4.	Total Numbers of HHs	78309
5.	Average Households size	4.13
6.	Area	1546.83
7.	Population Density (persons/ sq.km)	209
8.	Sex Ratio (males per 100 females)	79.73
9.	Percent of Literacy Rate (5 years & above)	74.8

Source: Population Census, 2011

According to approved EIA report, a total of 8 VDCs (Bhimad, Chhang, Rising Ranipokhari, Majhkot, Kotdarbar, Jamune Bhanjyang, Pokhari Bhanjyang) and one municipality are affected by the project. Now, Pokhari Bhanjyang has been merged into Byas Municipality and Sabung Bhagwatipur is added in the list of project affected VDC. Therefore, the total population of 8 VDCs and one municipality in the project area is 98,934 with 43,354 (43.82%) male and 55,400 (56.18%) female. Similarly, there are 24,030 HHs in the project VDCs/Municipality and average HH size is 4.1. Table 4-8 shows demographic characteristics of the project VDCs.

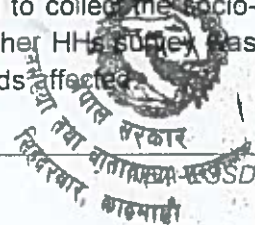
Table 4-8: Demographic Characteristics of the Project Affected VDCs/Municipality

VDCs/ Municipality*	Population			HHs	Sex Ratio	Averag e HH size	Area (sq.km.)	Pop. Density (person/sq.km)
	Total	Male	Female					
Bhimad	4893	2096	2797	1263	74.94	3.9	39.02	125
Chhang	6698	2863	3835	1721	74.65	3.9	59.96	112
Majhkot	6799	2867	3932	1522	72.91	4.5	61.81	110
Rising Ranipokhari	3917	1642	2275	861	72.18	4.5	29.90	131
Sabung Bhagwatipur	7302	3092	4210	1503	73.44	4.9	54.09	135
Kotdarbar	5512	2288	3224	1099	70.97	5.0	44.10	125
Jamune Bhanjyang	9838	4416	5422	2408	81.45	4.1	61.72	159
Byas*	46877	21191	25686	12300	82.50	3.8	97.03	483
Kahun Shivapur	7098	3079	4019	1353	76.61	5.2	70.49	101
Total/Average	98934	43534	55400	24030	78.58	4.1	518.12	191

Source: CBS, 2011

4.3.2 Affected Persons/Households

A household survey was undertaken targeting the randomly selected 399 HHs having land or assets below 425 m of reservoir FSL in affected VDC and Municipality to collect the socio-economic and cultural situation of affected persons during EIA. No further HHs survey was conducted for S-EIA as there was no change in the number of households affected.



4.3.3 Additional Affected Communal Resources

There is no change in the baseline of the communal resources affected by the project except one additional suspension bridge. The bridge connecting Channg Patan and Majhkot is to be affected.



5 IMPACT ASSESSMENT

The contents of this chapter discusses the potential impacts on the physical, biological and social environment that are associated with the implementation of the project. The adverse impact on physical, biological, socio-economic, and cultural environment have been described in Sub-chapters 5.1, 5.2 and 5.3. Similarly, beneficial impacts have been described in Sub-chapter 5.4.

5.1 Physical Environment

The main physical impacts on the environment are the impacts associated with land take for the reservoir, resettlement, potential disturbance or change in the slope stability, runoff and drainage patterns in the project facility areas, access road and temporary construction areas. There will also be an increase in shoreline erosion around the rim of the reservoir due to the fluctuations in the water level with the formation of the reservoir. Apart from the issues related to land take, resettlement and changes in water quality of the reservoir, the majority of the physical impacts can be mitigated and reduced to an acceptable level. Air quality impacts are localized and can be mitigated. Another, main adverse impact will be on the river flow as the project is a seasonal storage project. The flow regime and associated river morphology processes will be significantly affected along the newly formed reservoir with an area of 7.26km² and an approximate length of 18km. *There is no change in the area of the reservoir as compared to the approved EIA report.*

5.1.1 Watershed and Drainage Conditions

The watershed area of the THP lies in a fragile physiographic region of the middle mountains, which is susceptible to landslides. *There is no change in the impacts on watershed and drainage conditions as compared to the approved EIA report.*

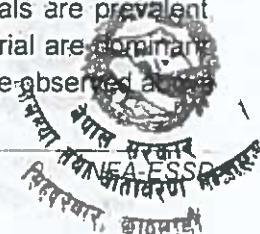
5.1.1.1 Construction Phase

Adverse impacts anticipated during project construction include a range of site specific or localized construction induced effects. These would include the potential for rock and landslides from disturbance due to construction blasting, drilling, vibration and slope cutting operations; alteration of localized drainage and storm runoff, and unplanned release of construction spoils in to the river. During the S-EIA field visit, it was noticed that the natural drain is disturbed due to the construction of road and thus the problem of water logged near the settlements is observed. The impact on the watershed is expected to be moderate in magnitude, long term in duration and local in extent.

5.1.1.2. Operation Phase

The formation and operation of the reservoir with an approximate area of 7.26km² will lead to landslides especially along the shoreline. The shoreline erosion is expected to be more pronounced in weak areas susceptible to slides such as in areas like Bhimad Bazaar, Chore Patan and along the Wanton Khola. Some sections of reservoir from Bhimad Bazaar to Geruwatar exhibit typical vertical bank erosion of loosely consolidated terraces.

In the upper reservoir area, the soil slides associated with terrace materials are prevalent while in the lower reservoir area, soil slides associated with colluvial material are dominant. However, the landslides in the lower reservoir area are of small scale and are observed as



the FSL. Thus, the risk of slope instability due to the reservoir operation should be considered in the upper reservoir area. The failure at the terrace breaks are mostly associated with the toe cutting by the stream, caving and overhanging. Toe cutting of the terrace breaks is remarkable at Bhimad Bazaar, Sanutar, Jhakas, Wantan Khola and Phedi Khola. In the colluvial materials below Tittuwa it is reported that slow creeping phenomenon is observed in the colluvial material on the valley slopes below Tittuwa, which needs to be investigated.

After impounding, further slides and slope failures can be expected in the reservoir area consisting of weathered and fractured dolomite, slate, phyllitic slate, colluvial soil and conglomerate. The weathered/ fractured rock, colluvial soil and conglomerate after inundation will become saturated. Furthermore, the saturation enhances the decrease in shearing resistance and will increase the pore pressure thus resulting in the sliding of the rock mass causing shoreline erosion. Similarly, the collapse of such sediments in the reservoir will eventually decrease the live storage of the reservoir.

Small- scale slides that would be aggravated because of inundation of the lower slopes and the initiation of small flood waves will have little effect on the stability of the dam and the side slope itself. However, after impoundment of the reservoir the slides along the side slopes may continue until the slope will turn to its natural state of equilibrium. Furthermore, the fluctuation of the water level up to almost 37m will create a zone devoid of vegetation leading to additional slope failures. The water level raised during the operation of the reservoir will increase the existing risk of instability especially along the immediate foreshore. The critical areas have been identified during the survey, which are along the Seti river bank near Bhimad Bazaar up to Badarkuna. This stretch has a high risk of failure in the long run even if it does occur immediately after the reservoir formation. This area is more critical, as there are settlements along the banks. The impact is expected to be long termed but quantification of the extent of this induced additional risk is almost impracticable.

5.1.2 Topography, Land Take and Landuse

The land take for the project has increased from 1034ha to 1075.01ha as compared with the approved EIA report. This increase in the land take is due to the identification and addition of muck disposal site for the project.

5.1.2.1 Construction Phase

The total land take for various project components like the dam site, reservoir and powerhouse, as well as construction borrow pits and quarries, temporary and permanent work camps and construction of an access road is estimated at 1075.01ha. Out of this, 901ha land for reservoir, 18ha land for dam site and powerhouse, 30 ha land for construction of access road and 25ha land for permanent work camp will be permanently acquired. Similarly, 25ha land for borrow pits and quarry areas, 35ha land for temporary construction camps and 41.01ha for area of disposal sites will be temporarily acquired which includes 0.41ha built up area. The disposal sites are proposed in built up area as per the demand of local people for filling up the land to make it more suitable for settlement. Land take by the project is same except muck disposal area as compared to the approved EIA report. Estimated landtake for the project is given in the table 5-1. The impact can be classified as high in magnitude, local in extent and the duration is long term.

Table 5-1: Estimated Land Take of the Project

S. N.	Project Facility	Land Take as per Approved EIA (ha)	Actual Land Take (ha)	Type	Characteristics
1	Reservoir (el. 415+10)	901	901	P	Mainly forest and agricultural land
2	Dam site and Powerhouse	18	18	P	Mainly forest land;
3	Borrow Pits and Quarry Areas	25	25	T	Agriculture and forest land;
4	Construction Access Road	30	30	P	Agriculture and forest land
5	Temporary Construction Camps/ Construction Yards	35	35	T	Up to 3 camps; mainly agriculture land;
6	Permanent Work Camp	25	25	P	One camp which will be converted from a temporary to permanent camp; mainly agriculture land;
7	Area of Disposal Sites	-	41.01	T	Agriculture, sand and shrubs
Total		1034	1075.01	P+T	

Note: P- Permanent Land Take; T- Temporary Land Take

The detail landuse table for land take of the project is attached in appendix F

5.1.2.2 Operation phase

No significant impacts on topography and land use is expected during the operation phase. The impact related to slope instability due to the reservoir, soil slides associated with colluvial material are considered to be same mentioned in the approved EIA report. The impact is expected to be low in magnitude, long term in duration and local in extent.

5.1.3 Air Quality

There is no change in the impacts on quality of air in the project area as compared to the approved EIA report.

5.1.3.1 Construction Phase

The impact on air quality due to road construction, vehicular movement, construction activities such as blasting, quarrying, excavation, site clearing, smoke from cooking for laborers will be expected to be same mentioned in the approved EIA report. The impact is expected to be low in magnitude, for short duration and site specific.

5.1.3.2 Operation phase

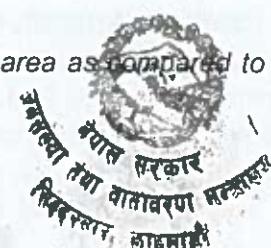
However, during the operational phase air pollution effects associated with the project are expected to be from the vehicles of the power plant on unpaved road sections and other disturbed surfaces. The impact is expected to be low in magnitude, long term in duration and site specific in extent.

5.1.4 Microclimate

There is no change in the impacts on microclimate in the project area as compared to the approved EIA report.

5.1.4.1 Construction Phase

No impacts are expected during the construction phase.



5.1.4.2 Operation Phase

As the reservoir area is 726ha over an approximately 18km stretch for FSL 415m along the Seti River some changes in the local micro-climate is expected. There will be an increase in the humidity due to evaporation from the reservoir, and a decrease in the average maximum temperature in the summer season as well as a rise in the average minimum temperatures in the vicinity of the reservoir. When the temperature cools down especially during the night, fog may be formed around the reservoir area and slopes. The impact will be low in magnitude and for long term and site specific. In the dewatered section, there might be an increase in temperature by a degree or more. The impact is expected to be low in magnitude, local in nature and will be for a long duration.

5.1.5 Noise and Vibration

There is no significant change in the impacts on noise and vibration in the project area as compared to the approved EIA report.

5.1.5.1 Construction Phase

Construction activities and operation of diesel plants, vehicles and ventilators, cement batching and aggregate crushing plants at various project sites will generate noise and vibrations. The increase in ambient noise levels will have pronounced impacts on settlements nearby to the headworks, powerhouse site and some sections of the access road. Blasting will generate the loudest noise levels of short duration. No impact will be felt in the core project area as there are no settlements nearby. However, impacts will be felt in Huksetar, Beteni and Bisghare which are downstream of the powerhouse. The impacts are expected to be moderate in magnitude and for short duration and local.

Strong vibrations and overpressure can damage nearby houses and other structures. The main sites of vibration generation will be at the blasting sites, tunnel portals and entrances, adits and intake etc. *There is, no any further significant impact predicted, mentioned in the approved EIA.* The impact will be moderate in magnitude, site specific and for short duration.

5.1.5.2 Operation Phase

Noise generated during the operational phase will generally result from vehicular traffic and vibration levels are expected to be negligible.

5.1.6 Surface Hydrology

There is no impacts on surface hydrology as mentioned in the approved EIA report.

5.1.6.1 Construction Phase

No impacts is expected during the construction phase.

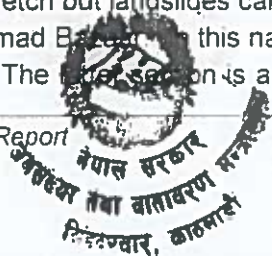
5.1.6.2 Operation Phase

No impacts is expected during the operation phase.

5.1.7 Sedimentation and River Morphology

5.1.7.1 Construction phase

Reservoir stretch flows through a narrow gorge. Landslides and soil erosion are not evident in this stretch but landslides can be observed at the end of the reservoir stretch from Badarkuna to Bhimad. In this narrow stretch of the reservoir, the topography is steep with rocky cliffs. The lower section is a sediment prone area and the banks consist of loose cemented



materials. These materials are permeable which indicates that in the long run after the formation of the reservoir the bank may collapse. The banks especially the right bank is cultivated in this area. These types of formation consisting of loose materials can be seen in populated areas like Bhimad Bazaar, Risin Patan, Chhore Patan and Jaruwapani. The sediment from this area is expected to be transported and deposited in the reservoir which is mentioned in the approved EIA and no further significant impact is predicted.

5.1.7.2 Operation phase

There is no any significant change in impact on sedimentation and river morphology as compared to the approved EIA report.

5.1.8 Water Quality

There is no any significant change in impact on water quality as compared to the approved EIA report.

5.1.8.1 Construction phase

During the construction activities there will be a temporary increase in the turbidity and sediment content of the river. Potential uncontrolled spillage of petrochemicals, oils, paints, cement slurry and hazardous substances may have adverse impacts on the river water quality which will increase during the dry season. The potential for adverse impacts is nevertheless short term in nature, high in magnitude and local in extent.

5.1.8.2 Operation Phase

Water quality will be influenced by sediment entrapment, increase in carbonaceous compounds (methane) and an increase of H_2S and CO_2 at the lower parts of the reservoir due to anaerobic decomposition of flooded vegetation and organic matters which will be more pronounced during the initial 1-3 years. Moreover, methane, a greenhouse gas is a significant contributor to global climate change. *There is no any significant change in impact on water quality in S-EIA as compared to the approved EIA report.*

5.1.9 Seismicity

There is no any significant change in impact on seismicity as compared with approved EIA report.

5.1.9.1 Construction Phase

No impacts are anticipated during the construction phase.

5.1.9.2 Operation phase

Several instances of reservoir induced seismicity have been recorded and the mode of earthquake induced by the filling of a large reservoir is not yet understood. According to international research and records it has been found that the formation of deep reservoirs may trigger a seismic phenomenon, irrespective of the past history or cycles of seismic events in the region. Nonetheless, further extensive studies have yet to be done to confirm this thesis in international practice. Seismicity is due to the weight of the impounded water which may change the stress field under the reservoir or due to increased ground water pore pressure. However, it is believed that seismicity increases with reservoir impoundment under certain conditions. The hydraulic head of more than 100 m in the reservoir and the presence of tectonic elements such as faults and folds etc. are conditions leading to reservoir induced seismicity. Therefore, reservoir induced seismicity is expected in the Tanahu HEP (Upper Seti Storage HEP) since both conditions are present in the project area.

The project has already assessed the maximum downstream flood level, if there were an instantaneous dam failure (i.e. assuming that the Tanahu dam could disappear instantaneously, and stored water with the full supply level flows down the Seti River). In this scenario, the maximum water level at the confluence of Seti River and Madi River was estimated at 330 masl. While the most parts of Damauli town are located above this elevation level, there are also houses located below 330 masl which will be affected during dam failure.

5.1.10 Changes in Water Table

There is no any significant change in impact on changes in water table as compared to the approved EIA report. The approved EIA identified the following impacts;

5.1.10.1 Construction Phase

No major impacts are expected during the construction phase.

5.1.10.2 Operation Phase

It is obvious that the storage type of hydropower project affects the ground water situation. The construction of the reservoir, changes in the water table are expected at the upstream and around the reservoir rim. The water table is expected to rise especially in areas like Bhimad Bazaar where the topography of the area is rather flat and the geology consists of permeable rocks. However, due to the steep slopes of the reservoir valley with vegetation on both banks of the river it is anticipated that the impact will be low in magnitude, site specific and will be for long duration.

5.1.11 Spoil Handling and Disposal

The approved EIA has not mentioned about the muck disposal sites and generation and disposal of muck. The S-EIA team has identified some changes in the impacts of spoil generation and disposal as mentioned below.

5.1.11.1 Construction Phase

The spoil (muck) will be a major issue during project construction due to the large volume of material generated (from dam site preparation, tunneling, road works, etc.) and the limited stable disposal sites available in proximity to construction sites in the Damauli area. An estimated 1.972MCM of rock and 0.297MCM of soil will be excavated for project facility construction as shown in Table 5-2 and about 0.91MCM will be consumed for construction of project structures. So, remaining 1.359MCM excess spoil materials will required disposal. Five disposal areas, with capacity of 3.252MCM, have been identified in relatively close proximity (within 6-7km) to the Project sites. The detail landuse of proposed disposal sites and its capacity per site are shown in Table 5-3 and Table 5-4 respectively. The impact due to spoil handling and disposal is expected to be moderate in magnitude, site specific and for short duration.

Table 5-2: Estimated Total Excavated material

SN	Structure	Excavation (cu.m)		Remarks
		Common	Rock	
1	Access Road of Package 1	29817	93376	Finalized and added in S-EIA
	Diversion Tunnel	13500	31500	
	Dam and Spillway	105200	1064100	
	Intake	74500	291800	
	Headrace Tunnel		70380	
	Surge Tank		19530	

7	Penstock		12509	
8	Draft Tunnel		12321	
9	Tailrace		14283	
10	Outlet	1876	41939	
11	Powerhouse		81700	
12	Cable Tunnel and Terminal	7830	52614	
13	Main Access Tunnel	4440	65840	
14	Access Road of Package 2	60242	120509	
Total		297405	1972401	

Table 5-3: Existing Landuse of the Proposed Disposal Sites

Landuse	Area of Sites (ha)					Total Area (ha)	Remarks
	I	II	III	IV	V		
Forest	-	0.3	-	-	-	0.3	Finalized and added in S-EIA
Shrubs	-	-	4.42	0.91	2.18	7.51	
Sand	0.31	6.9	3.07	2.18	1.06	13.52	
Cultivation	11	2.29	1.46	0.08	4.17	19	
Built Up	-	-	-	0.27	0.14	0.41	
River	-	0.27	-	-	-	0.27	
Total	11.31	9.76	8.95	3.44	7.55	41.01	

Table 5-4: Estimated Disposal Volume per Site (cubic meter)

	For Package 1	For Package 2	Remarks
Disposal Area I Capacity	796500	-	Finalized and added in S-EIA
Disposal Area II Capacity	801900	-	
Disposal Area III Capacity	-	833500	
Disposal Area IV Capacity	-	229400	
Disposal Area V Capacity	-	590500	
Total	1598400	1653400	

5.1.11.2 Operation Phase

No impact is expected during the operation phase.

5.1.12 Downstream (of the Dam) Impacts

5.1.12.1 Operation Phase

The Project is planned to deliver the water diverted at the dam to the underground powerhouse through the 1.162km long of headrace tunnel for generation and release the water used for the generation from a tailrace outlet to the Seti River. The tailrace outlet is located at approximately 5.5km downstream of the dam and 3.3km downstream of the confluence with the Madi River. Impact can be envisaged during the annual complete flushing of the reservoir over a one month period which will result in extensive sedimentation in the section of the Seti River between the dam and the confluence with the Madi River. The agricultural land on the left bank appears to be high enough that it would not be affected. The agricultural land on the right bank will be acquired for the construction. The permanent river protection work will not be required in this section. However, it is difficult to estimate the erosion and sediment due to the difficulty of the analysis considering the annual flushing of the reservoir and sediments flow from the Madi River. Therefore, it is proposed that the monitoring of sedimentation patterns should be undertaken in this zone for at least 10km below the dam.

Dry Season Flow

The powerhouse will run only for 6 hours during the dry season that is from November to May and the remaining 18 hours will be utilized for maintaining FSL of 4m in the reservoir.

Therefore, apart from this 6 hours of peak, the flow in the Seti River will be much lesser. However, 10% of the minimum average flow of 2.4 m³/s will be available to maintain the aquatic ecology downstream up to a distance of 2.0 km from the dam site. At 2.0 km from the dam site the Madi River joins the Seti which has a mean monthly discharge of 14 m³/sec. Therefore, the impact on the local people residing along the banks is expected to be limited as the villagers will be able to use the Madi flow. During the field visit, it was noticed that the flow of Madi river will be directed towards Jhaputar village opposite to the confluence of Seti and Madi Rivers due to decrease in discharge of Seti River. This will probably increase the chances of land erosion near the village. *This impact was not identified in the approved EIA.* The impact is expected to be high in magnitude, long termed and local in extent.

Monsoon flow

However, during the wet season from the month of June to October a flow of 127.4 m³/sec will be available during 24 hours together with the spillway discharge. This will lead to significant impact on the river ecosystem along this section. During the monsoon, as soon as the reservoir is full the excess flow will pass over the spillway and the river will assume its full monsoon state. However, the change in river morphology is not expected to be significant since more than 15-20 km stretch of the river downstream of the dam flows through a narrow gorge. The river at this stretch consists of steep banks with vegetation. There is no changes in monsoon flow impact as compared to the approved EIA.

Table 5-5: Summary of Comparative Impact in the Approved EIA and S-EIA

SN	Physical Environment	Approved EIA versus S-EIA
1	Watershed and Drainage Conditions	
	Construction	No change
	Operation	Change (Potential reservoir rim failure sites identified through further investigations which increases the probability of slope failure.
2	Topography, Land Take and Landuse	
	Construction	Change (Five disposal sites of area 41.01ha have been identified in relatively close proximity (within 6-7km) to the project sites)
	Operation	No change
3	Climate Meteorology and Air quality	
	Construction	No change
	Operation	No change
4	River Hydrology and Morphology	
	Construction	No Change
	Operation	No Change
5	Geology and Soil	
	Construction	No change
	Operation	No change
6	Seismicity	
	Construction	No change
	Operation	No change
7	Water Quality	
	Construction	No change
	Operation	Change (evaluated sediment flushing water quality and likely potential impacts)
8	Air Quality	



SN	Physical Environment	Approved EIA versus S-EIA
	Construction	No change
	Operation	No change
9.	Downstream Impact	Due to decrease in discharge of Seti down the dam location, probability of flow of Madi river directed towards the village opposite to the confluence of Seti and Madi is very high. This will result in land erosion and river bank cutting.

5.2 Biological Environment

The implementation of the project will affect the baseline terrestrial and aquatic ecosystems in the project impact area in a number of ways, which are both adverse and positive. Since, the project is designed as a storage type, the main biological impact will be due to the clearance of vegetation from the reservoir submergence zone. *There is no significant changes in impact on the biological environment except for some changes in the number of trees to be felled down as compared with the approved EIA report.* The potential impacts during project construction and operation phases of the proposed project on biological resources of the project area are as follows:

5.2.1 Vegetation/Forest Resource

5.2.1.1 Construction Phase

Loss of natural vegetation due to site clearance from the 422.89ha forest land (construction sites and reservoir submergence zone) is the major impact due to the implementation of project. Impacts on natural vegetation and forests include:

- Loss of vegetation due to site clearance
- Increased demand for fuelwood and timber
- Encroachment on national and community forests
- Loss of protected species

(a) Loss of Vegetation Due to Site Clearance:

(1) Construction Phase

The Tanahu hydropower project affects 422.89ha of forest land in Tanahu district. Out of this, 353.89ha shall be acquired for reservoir area (FSL of 415+10m), 68.7ha for project facilities and 0.3ha for muck disposal sites. As per the tree numbering carried out, a total of 22,453 trees will be cleared up from 25 community forests in the reservoir area and project facilities sites during the project implementation. In addition to this 67,735 pole size trees from community forest and 2,655 trees from private forest shall be felled in the reservoir area and project facilities sites. Therefore a total of 92843 trees need to be felled from the reservoir area and project facilities sites including private trees. Table 5-6 shows the total number trees estimated to be felled down during the project construction. Similarly, the community forest wise details of the forest loss in the reservoir area and project facilities sites is given in the following Table 5-7.

Table 5-6: Total Estimated Number of Tree Loss

S.N	Project Features	Community Forest		Private Land trees/Forests	Total
		Tree (No)	Pole size (No)		
1	Reservoir Area	21,522	65,577	2,453	89,542
2	Project Facility	931	2158	2	3,301
	Total	22,453	67,735	2,655	92,843

* This is based on tree counting report of the reservoir area and project facilities sites

Table 5-7: Community Forest-wise Loss of Trees in Reservoir Area and project facilities sites

S.N	Name of CF	Address	Total No. of Trees	Total No. of Pole size tree	Area of CF (Ha)	Remarks
1	Posh-Barahi	Jamune-1	1657	5334	75.05	Reservoir area
2	Posheli	Jamune-1	1081	2616	48.75	Reservoir area
3	Barchyang	Jamune-2	4259	6978	160	Reservoir area
4	Jangtuyang	Jamune-3	2142	1422	104.32	Reservoir area
5	Umachowk	Jamune-5	731	1116	94.5	Reservoir area
6	Siddhabatasan	Jamune-6,7	1573	9438	25.24	Reservoir area
7	Bhirpani	Jamune-8	1980	2718	124.5	Reservoir area
8	Jinkot	Chhang-1	1277	6264	41	Reservoir area
9	Choketar	Chhang-1	577	1998	56	Reservoir area
10	Dada	Chhang-1	77	462	45.56	Reservoir area
11	Bhotchuli	Chhang-1	22	132	70	Reservoir area
12	Phulbari	Chhang-1	1910	11460	112	Reservoir area
13	Sangu Pokhare	Chhang-1	133	798	20.3	Reservoir area
14	Banchere Dada	Chhang-1	12	72	18.78	Reservoir area
15	Aahale	Kotdurbar-1	251	960	124	Reservoir area
16	Chandi Bhayer	Kotdurbar-2	1539	3798	440.1	Reservoir area
17	Jure Pahad	Kotdurbar-7	25	108	24.9	Reservoir area
18	Chulidada	Kotdurbar-7	507	1698	12.62	Reservoir area
19	Bajar Thumki	Kotdurbar-7	312	1278	62	Reservoir area
20	Chanakhredada	Rising Ranipokhari-7	436	2454	115.41	Reservoir area
21	Ghumaune	Rising Ranipokhari-9	678	3654	9.4	Reservoir area
22	Chandi Devi	Chhang-2	343	819	64.13	Reservoir area
23	Manung	Byas-7	470	1659	184.17	Project facilities sites
24	Beltar Bachyanggauda	KahuShivapuri-1	99	107	7.3	Project facilities sites
25	Salbas	KahuShivapuri-1	362	392	65.5	Project facilities sites
Total			22,453	67,735	2,105.53	Total no of tree loss from CF is 90188



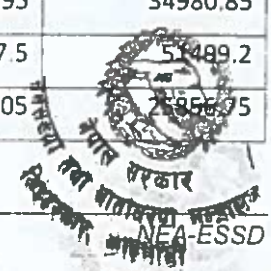
The approved EIA estimates a total of 161,967 trees to be felled down by the project. Out of this about 122,704 trees are to be cleared from the inundation area and 39,263 from the project facility sites. In the inundation area, the approved EIA estimates about 30,618 trees from community forests, 89,643 from national forest and 2,443 from private forest to be felled down. Whereas the Supplementary EIA shows that a total of 22,453 trees and 67735 pole size tree to be felled down from 25 community forests from the reservoir area and project facilities sites based on the tree numbering in the reservoir area and project facilities sites, keeping other trees from other types of forest constant.

Table 5-8: Comparison of Species wise loss of trees as per Approved EIA and S-EIA

S. N.	Local Name of Species	Scientific Name	No of trees to be cleared (DBH>10cm)		Difference (Actual – Approved EIA)
			Approved EIA	As per Actual (Tree Census) S-EIA	
1	Sal	<i>Shorea robusta</i>	10,910	316	10,594
2	Khayer	<i>Acacia catechu</i>	4,882	3154	1,728
3	Saj	<i>Terminalia alata</i>	2,841	1331	1,510
4	Chilaune	<i>Schima wallichii</i>	1,598	123	1,475
5	Khirro	<i>Sapium insigne</i>	1,598	2054	456
6	Sindure	<i>Mallotus philippensis</i>	1,420	3305	1,885
7	Singane	<i>Pterospermum lanceaefolium</i>	1,243	210	1,033
8	Simal	<i>Bombax ceiba</i>	1,154	344	810
9	Padke	<i>Albizia lucidior</i>	1,154	1909	755
10	Bot dhayero	<i>Lagerstroemia parviflora</i>	976	1347	371
11	Karma	<i>Adina cordifolia</i>	888	33	855
12	Siris	<i>Albiza lebbeck</i>	888	285	603
13	Bel	<i>Aegle marmelos</i>	533	191	342
14	Katus	<i>Castonopsis indica</i>	355	41	314
15	Jamun	<i>Syzygium cumini</i>	89	69	20
16	Dabdabe	<i>Garuga pinnata</i>	89	263	174
17	Others		0	7478	7,478
Total			30,618	22,453	8165

Table 5-9: Loss of Trees Volume of CF

S.N	Name of CF	Volume of Wood (cu .ft)	Volume of Fuelwood (cu .ft)	Total volume (cu .ft)
1	Posh-Barahi	18284.75	17793.5	36078.25
2	Posheli	5508.96	11285.3	16794.26
3	Barchyang	33729.93	40822.21	74552.14
4	Jangtuyang	15063.4	23565.76	38629.16
5	Umachowk	13028.34	9624.34	22652.68
6	Siddhabatasan	17470.9	17509.95	34980.85
7	Bhirpani	28791.7	22707.5	51499.2
8	Jinkot	14628.7	11228.05	25856.75



9	Choketar	3271.99	2382.75	5654.74
10	Dada	860.1	559.99	1420.09
11	Bhotchuli	397.08	21.52	418.6
12	Phulbari	9713.93	7778.31	17492.24
13	Sangu Pokhare	1425	664.48	2089.48
14	Banchere Dada	300.5	61.56	362.06
15	Aahale	3403.3	4459.81	7863.11
16	Chandi Bhayer	8811.13	20505.9	29317.03
17	Jure Pahad	64.57	149.03	213.6
18	Chulidada	5724.64	5814.66	11539.3
19	Bajar Thumki	4642.41	4006.09	8648.5
20	Chanakhredada	4035	3571.82	7606.82
21	Ghumaune	5447.1	4007.96	9455.06
22	Chandi Devi	3891.4	1788.19	5679.59
23	Manung	7801.92	8135	15936.92
24	Beltar Bachyanggauda	583.53	610	1193.53
25	Salbas	1006.19	4040	5046.19
Total		207,886	223,094	430,980

About 220 t/ha of biomass of forest is estimated in the project area. Economic value of loss of trees is estimated as NRs. 338,600,946.

(2) Operation Phase

(b) Increased Demand for Fuelwood and Timber

The inflow of people from surrounding areas and construction workers in the project area for jobs will increase. The construction workers, their dependents and people who provide goods and services to these new migrants will undoubtedly have an impact on the forests of the surrounding area. So impact will be moderate in magnitude, site specific and for short duration.

(c) Possible Encroachment on the National Forest

During the site clearance period the petty contractor, the local people from surrounding areas may involve in the encroachment of the National Forest outside of the submergence zone. The possibility of encroachment of Community Forests is low due to the continuous movement of the "Heralo" in the forest area. Such impacts are considered to be moderate in magnitude, site specific and for short duration.



(d) Exploitation of Non-timber Forest Products

During the construction period, human resources affiliated directly or indirectly in the construction of the project may be involved in the collection and selling of non-timber forest products like medicinal plants. These species are not only common to the project site but are equally found in similar climatic regions in other parts of the country. So these impacts are considered as direct impact, site specific and for short duration.

(e) Impact on Rare, Endangered and Threatened Plant Species

Gittha (*Dioscorea deltoidea*) of the Appendix II of the CITES categories is found in the project alignment. Similarly, Sal (*Shorea robusta*), Khair (*Acacia catechu*) and Simal (*Bombax ceiba*) found along the alignment has been banned for the transportation, export and felling for the commercial purposes under the Forest Act 1993, GoN. Vulnerable species Tatelo (*Oroxylum indicum*) and rare species of Chatiwon (*Alstonia scholaris*) reported elsewhere in similar climatic regions of the country are also found in the project area which are likely to be affected by the implementation of project.

5.2.1.2 Operation Phase**(a) Encroachment of Forest**

During the operation phase, the buffer zone that lies between the forest land and reservoir level may provide easy access to the local people for the encroachment of forests and its products. It will provide opportunities for earning by selling of timber and non-timber products. This impact will be moderate in magnitude, local and for a long duration.

(b) Conservation Status of Plants

Although 11 species (mentioned in EIA) included in the conservation lists of IUCN, CITES and Government of Nepal were found in the study area, it is actually not very rich in terms of biodiversity. The flora in the project area is already disturbed and impacted by human activities such as farming, cutting of trees, hunting and trapping, collection of various forest products, etc. Only residual populations of plants colonize near the human habitation zone and reservoir area. No permanent core colony of endangered and rare plant species is found in this area. The loss of these species in the local, regional and national scale is minimal and the project will have moderate impacts which will be of lesser significance.

5.2.2 Wildlife

The impacts predicted on the local fauna during construction and operation phases of the THP are as follows:

5.2.2.1 Construction Phase**a) Loss of Habitat**

Loss of habitat is considered a direct long-term impact to wildlife of the project area. The construction of the dam, intake, powerhouse and reservoir and other associated facilities requires site clearance which will disturb the wildlife habitat. A total of 27 species of mammals reported from the Project area by direct and indirect survey methods will lose their natural habitats. Fauna reported from the area are widely distributed in the forest of the upper hills and the area occupied by the project in comparison to the total available forest habitat is less and likely to be considered as low impacts. The behavior of animals will change due to the loss of their natural habitats and other disturbance associated with constructive activities. So these impacts are low in magnitude, site specific and for long duration.

(b) Construction Disturbances

Construction disturbances resulting from blasting, drilling, vehicle movement and other related activities would interrupt normal movement, feeding and other activities of mammals. Night blasting, electric lights in an around the work site and the presence of humans will also affect wild animals grazing around the area. The clearing, excavation, grading and filling activities will affect less mobile, frequently smaller species such as frogs, lizards and small mammals (rats). Water pollution from project activities (muck disposal, washing of concrete batching plant, solid waste and accidental spill of oil and lubricants) may also affect the local wild fauna and water birds. This is short-term, localized and of low impacts and will be reduced as construction work at each site is completed.

(c) Hunting and Poaching by the Labor Force

Possible hunting and poaching by the labor force may also consider a short-term localized impact. The local hunters and the workforce might be attracted to hunt birds and other wild animals. The possibilities of hunting and trapping by workers during the construction period will have some adverse impacts on the local wild fauna. However such pressure on wildlife will be site specific and decrease as the work tends to be completed. This impact is considered as low, site specific and for short duration.

5.2.2.2 Operation Phase

The normal movement of fauna from one river bank to another will be completely blocked by the reservoir formation. Some wild animals may change their natural behaviour, although most of the fauna reported from the area are predator visitors and confined to the uphill-forested areas. So the magnitude of the impact due to project operation is considered as high, site specific and for long duration.

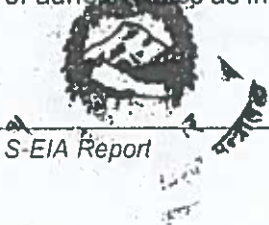
5.2.3 Fish and Aquatic Life

The construction and operation of the THP is likely to have some impacts on the local fish resources. Submergence of 7.26 km² riverine habitats, loss of habitat, blockage of fish migration and dewatering of approximately 2.0 km river section are the impacts likely to appear due to implementation of the project. The other possible impacts are reduced flow from the Madi-Seti confluence to further downstream, changes in water quality, and possible increase in river sedimentation etc.

5.2.3.1 Construction Phase**a) Habitat Destruction and loss of Spawning Ground**

The construction disturbances such as removal of river boulder, temporary diversion of the river for dam construction, water pollution and possible increase in fishing activities are considered as adverse impacts of the project during the construction phase. The Seti River is characterized by large number of boulders, pebbles and gravels especially in the downstream of the dam.

The boulders occupy large pool areas acting as fish shelters whereas pebbles and gravels deposited in the river provide potential spawning habitats. The excess removal of boulders from a particular place will affect the fish habitat, upstream migration (migration with the help of adhesive disc as in *Schizothorax sp*) and provide easy place for exploitation of fishes.



5.2.3.2 Operation Phase

a) Impact on Fish

The transition from riverine to lacustrine conditions would probably have profound effects on the aquatic conditions and fauna of the area. Due to the formation of the reservoir the river flow velocity along the reservoir stretch will be substantially reduced. All rapids and stretches of broken water (run and riffle) and spawning and rearing areas will be submerged accordingly. Rapid colonization of fish species preferring standing water environments often takes place soon after a reservoir has been created.

Fish species such as Copper mahseer, mahseer, minor carps (*Labeo sp.*) and *Puntius sp.* will grow well in the reservoir area. There will be abundant growth of aquatic vegetation which, contribute direct food to most of fish species such as *Labeo sp.* and *Chagunius chagunio*. Carnivorous fish species will breed fast and dominate the ecosystem due to the prolific growth of aquatic and terrestrial insects stranded on the slow moving water surface of the reservoir. The other species likely to be adapted in reservoir type habitat are *Channa sp.* and *Barilius sp.* The snow trout species which occupy a very low distributional range and composition in the project area will further be decreased or eliminated by the formation of the reservoir. This species will be adapted to live in cool precipitous upper section of the Seti reservoir. The population of migratory catfish such as (*Bagarius bagarius*) and Jalkapoor (*Clupisoma garua*) will also probably be eliminated from the reservoir area.

b) Fish Migration

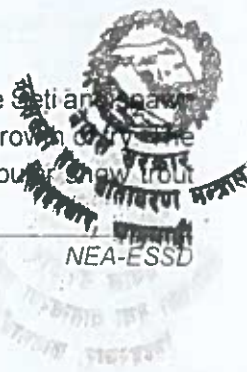
A barrier effect is expected on long distance and mid-range migrant species due to the construction of the dam about 140 m high above the riverbed. The presence of long distance migrant species such as Sahar, Gouch, Jalkapoor and Eel are reported from the Seti River especially in the high water phase. The banks of the Seti River near Bandarkuna and Sisneri are the likely spawning sites in the upstream area. The construction of the dam will eliminate access to some upstream spawning areas for migratory fishes. The migratory species which occupy a long migration range for spawning, rearing and feeding in the upstream of the Seti River will be significantly affected by the construction of the dam. The construction of the dam will pose significant impacts with regard to the migration of migratory species of the Seti River. Mahseer, Eel, Gouch and Jalkapoor are of prime concern. The overall magnitude of the impact is considered high, long term and localized because as mentioned fish diversity and density is high in the Bhimad area. The construction of the dam will pose significant impacts to river migration of fishes.

c) Resident Species

It is expected that the resident fish species in the affected parts of the river will be influenced during all the life stages. All fish populations will decrease according to the reduction of water discharge and change of water quality. The species and populations of fish living in the dewatered section will be affected most. This includes the following species *Garra gotyla*, *Noemacheilus bevani*, *N. rupicola*, *Glyptothorax sp.*, *Barilius bendelisis*, and *B. barana*. The pool areas will provide a suitable rearing ground for the resident and midrange migrant species. Some small size fish like *Barilius* may survive in pool areas.

d) Mid-range Migrant Species

Mid-range migratory fish, living their adult life in the central or lower parts of the Seti and spawning in upper parts, will be affected mainly by the reduced area for spawning and growth. The impact will be considered particularly high during March -April when the population of snow trout



breed. However, the adult stages will also be affected in 1.5 km stretch according to discharge reduction. Any change in water quality will also affect the spawning and nursery ground more severely than the adult residence area. This includes the snow trout species *Schistothorax plagiostomus*, *S. progastus*, *Neolissocheilus hexagononepis* and *Labeo dero*. The adult fish requires more water as a result of low flows and they could move out of the area (1.5 Km) into deeper water. In the worst case scenario there could be a species change to catfish, rock carp and loaches which are adaptable to low flow conditions.

e) Long Distance Migrant Species

Long distance migratory fish can be defined as fish living in the downstream part of the Seti and or Narayani River and move into the upper reaches for spawning. The upstream spawning migrations mostly take place between May to July. The likely reduction in flow during spawning and migration will have significant impacts on long distance migratory fishes. The young fry living in spawning areas or nearby downstream will experience lower discharge and different water quality compared to pre-diversion years. Production of fry of these fish species will be reduced due to the reduction of discharge in addition to impacts affects caused by the modified water quality. This will concern fish species like *Tor putitora*, *T. tor*, *Anguilla bengalensis*, *Bagarius bagarius* and *Clupisoma garua*.

f) Loss of Micro-organism

Dewatering below the powerhouse for approximately 18 hours a day for a stretch of 1.5 km will have a serious impact on the micro-flora and aquatic invertebrates. A total of 5 species of fish, 14 species of phytoplanktons, 4 species of zooplanktons and 10 species of aquatic insects may be lost in this section. Fish food in the Seti River is plentiful. The reduced flow would result in lower flow velocities, increase in water temperature and shifts in zooplankton, aquatic and riparian vegetation. The overall aquatic production in a moderate or fast flowing river takes place on the river bottom. In addition, input from the terrestrial surrounding along the river like leaves, insects, grass, and other organic particles often play an important part to increase the productivity of the river. Generally speaking, a permanent reduction of water flow in a river will reduce the area of river bottom for aquatic production.

The following table shows the summary of the changes in impact with respect to the approved EIA report.

Table 5-10: Summary of Comparative Impact in the Approved EIA and S-EIA

SN	Biological Environment	Approved EIA versus S-EIA
1	Vegetation/Forest Resources	
	Construction	Increase in no. of affected community forests from 9 to 25 in the reservoir area and project facilities sites. Decrease in the no. of trees of CF in the reservoir area and project facilities sites by 8165 as per the tree counting report.
	Operation	No change
2	Wildlife	
	Construction	No change
	Operation	No change
3	Fish and Aquatic Resources	
	Construction	No change
	Operation	No change



5.3 Socio-economic and Cultural Environment

The main social impacts arising from the construction and operation of the storage type of hydropower project in an area where subsistence agriculture is the main economic activity and culture traditional can be broadly classified as:

- Relocation of the people;
- Increased pressure on community resources for water, forest, and agriculture land;
- Potential health, sanitation concerns and increase in disease vectors associated with the pollution from construction operations, work camps and from the deterioration of water quality;
- Potential for an increase in illegal activities resulting from the increased population and access such as illegal fishing, hunting, felling of trees;
- External pressure on social/religious traditional ways of living in the communities; and
- Overburdening of the existing social infrastructure (e.g. health services and schools) due to the influx of the construction and operations work force.

5.3.1 Loss of Land and Property

5.3.1.1 Effect on Land for Cultivation

Project will acquire 170.09ha cultivated land for the construction of different components which is 15.9% of the total required land.

Table 5-11: Cultivated Area along the Reservoir Site and other Project Facilities

Type of Land Use	Reservoir FSL415+10m	Risk Zone	Project Facility Sites	Grand Total
Cultivated areas (ha)	108.89	6.51	54.69	170.09

5.3.1.2 Effect on Agricultural Products

The majority of the local people in the project affected area are engaged in agriculture, the construction of project will have adverse impact on livelihood of the local people. Annual production loss from the agricultural areas occupied by the project is presented in Table 5-12. A total of 688.79MT agriculture products will be lost due to project construction.

Table 5-12: Annual Production Loss of the Agricultural Land

Loss Type		Production losses in metric ton (1000 kg)				
		Reservoir FSL415+10m	Risk Zones	Project Facility Sites	Grand Total	Percent
Irrigated land	Paddy	205.8	12.3	83.23	301.33	43.75
	Wheat	24.83	1.48	10.99	37.3	5.42
	Maize	43.12	2.58	17.63	63.33	9.19
	Early paddy	52.66	3.15	21.54	77.35	11.23
Upland	Maize	108.89	6.51	37.82	153.22	22.24
	Millet	20.91	1.25	6.88	29.04	4.22
	Pulses	19.6	1.17	6.45	27.22	3.95
Grand Total		475.81	28.44	184.54	688.79	100.00

5.3.2 Affected Structure Owners of the Project

The EIA identified the private structures and its ownership. Construction of the project needs the permanent acquisition of 313 private structures owned by 10 families and there is no change in the number of persons and affected structures than mentioned in the EIA report.

- **Residential Structure Affected Owners**

The entire owners of the affected structures are not residing in these structures. As 86 families are displaced due to the construction of the proposed project, the impact is high in magnitude, local in extent and of long term duration.

- **Residential Structure Affected Owners without Legal Holdings**

Thirty HHs will be losing their residential buildings but these HHs have no entitlements on these properties.

5.3.3 Socioeconomic Impact during Construction Phase

5.3.3.1 Access and Infrastructure

Reservoir inundation will affect community infrastructure, including suspension bridges, motor able roads, foot trail, sources of drinking water, cremation sites. In EIA, it has been mentioned that six suspension bridges would be affected by the project, later during the field survey of supplementary EIA, one more suspension bridge at Dablyang which connects Rising Ranipokhari and Chhang-2, and one twin located at dam site of the project, also affected due to inundation. The approved EIA shows the impact on 6 suspension bridge whereas 1 additional bridge (connecting Chhang and Majhkot) will also be affected by the project.

Table 5-13: Affected Infrastructures and Community Structures in the Project Area

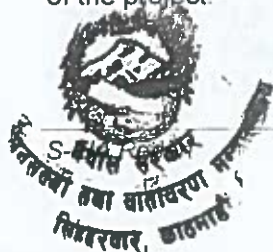
S.N.	Infrastructure	No.	Length (m)
Infrastructures			
1	Motorable road	2	300
2	Suspension bridge	7	740
3	Ropeway	1	
4	Foot trail	20	31945
5	Electricity distribution line	2	2100
6	Irrigation Canals	1	
Community Structures			
7	Thati (Resting Place)	6	
8	Temples	2	
9	Cremation Sites	9	

5.3.3.2 Health, Water Supply and Sanitation

The construction activities and the likely increase in population of the area during the construction phase may give increased pressure to the existing water supply system and bring about the shortages of drinking water. This may also generate conflicts and dissatisfaction between the local and new users. Furthermore, the influx of a large number of workers during the construction will potentially deteriorate the existing sanitation conditions. The lack of proper sanitary measures and increase in water pollution and solid waste can bring about epidemics such as typhoid, cholera, and diarrhea. Other communicable diseases like STD and HIV cannot be ruled out when a large number of people flock and live in a limited area at the construction sites. This impact is high in magnitude, local in extent and of long term.

5.3.3.3 Occupational Hazards and Safety

Work related injuries and vehicle accidents are likely impacts expected during the construction of the project.



5.3.3.4 Vulnerable Groups

The experiences in other project areas have shown that women and children are vulnerable groups. Girl trafficking, and sexual and labor exploitation can happen during the construction phase. Although child labor is prohibited as per Nepal's law, children are engaged in stone quarries and other menial jobs. Besides women, children and elderly people can be regarded as one of the vulnerable groups, who may be in more danger of accidental risks and health hazards. In some cases, it will be more difficult for the elderly people to be relocated away from the current places to new places since they have had a strong and long relationship with the community and an attachment for their own structures and community itself. This impact is high in magnitude, local in extent and of long term.

5.3.3.5 Inflow of Large number of Workers

The influx of a number of workers including construction laborers into the project area will bring about a number of impacts to the local communities and the environment. As previously mentioned, it is likely to give significant stress to the local water supply system and existing public facilities. Deterioration of sanitary conditions and environment will also occur. There will also be a potential risk of the spreading of the communicable diseases such as typhoid, cholera, and diarrhea if the appropriate measures for sanitation will not be taken. Furthermore, the inflow of a number of male workers might increase sexual activities, and consequently lead to the possibilities of transmitted diseases such as STD and HIV AIDS. In addition, the possibilities of trafficking and sexual exploitation of women or children cannot be ruled out. Since it is assumed that the construction workers will come from different places and different ethnic and caste groups to work in the limited area for a long time, there will also be possibilities of social conflicts and disruptions between these workers and the local communities and the workers and project management. This impact is high in magnitude, local in extent and for long term.

5.3.3.6 Effects on the Livelihood of Fishermen

There are no full time fishermen in the Seti and Madi rivers now. The Bote community (ferry rider community) used to be engaged in ferry operations across the Seti and Madi Rivers and practice fishing as their main livelihood. After the replacement of boats with the construction of suspension bridges, the traditional ferry operations came to a halt. They are now engaged in agro-economic activities and only occasionally fishing during their free time. Other ethnic groups such as Magars, Gurungs and Kumals are also engaged in part-time fishing. Accordingly, it cannot be said that the project will directly and seriously affect specific fishermen groups or fishermen communities. However, it can be assumed that the water diversion of the Seti River will bring about some effects on the fishery resources in the project area, and may influence their fishing activities to some extent. This impact is high in magnitude, local in extent and of long term.

5.3.4 Beneficial Impacts

5.3.4.1 Beneficial Impacts during the Construction Phase

The implementation of this project will lead to economic development opportunities in the region. The main areas of benefit during the construction period will be:

- Opening the area to market forces and trading of goods to some extent.
- Job opportunities to the local people



As most of the outside construction related population will depend on cash to meet their day to day requirements and housing expenses, there will be some opportunity for the locals as well as outsiders to exploit the market for essential commodities and hotels.

Overall the region is expected to enjoy economic benefits from the implementation of project:

- Rural Electrification;
- Employment Opportunities; and
- Flow of Goods and Services.

These impacts are generally expected to be positive, moderate in magnitude, regional and both short and long term in nature.

5.3.5 Socio-Economic and Cultural Impact during the Operation Phase

5.3.5.1 Downstream Effect

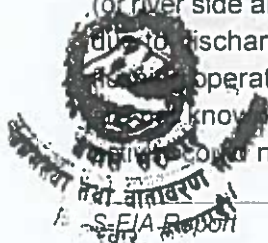
There may be accidental risks to the lives of people and cattle, particularly in the downstream areas due to surge of water in the Seti River twice a day during the peak power demand periods. The sudden release of water and the fluctuation in the flow downstream of the powerhouse will also affect white water rafting tour operators who have recently been opened and carried out in the Seti River up to Deughat which is close to Narayanghat. On the other hand, it will be less likely that there are serious downstream effects on the agricultural activities in the areas since the local people in downstream areas do not use water from the Seti River for irrigation but from small streams. This impact is moderate in magnitude, local in extent and long term in duration.

- **Safety Issue**

Regarding the downstream safety issue, it has not been examined in detail from an environmental viewpoint at this stage of the project since topographic surveys and hydraulics of the downstream river course have not been conducted. Operation of irrigation schemes in the immediate area of the tailrace has not been seen from preliminary examination by using the topographic map at 1:25,000 scale and field reconnaissance survey. This may be because the immediate downstream area consists of a deep gorge. Therefore, a siren system will be proposed to be installed in the section between the dam site and the tailrace. The siren system will be installed, at least at 2 sites in the vicinity of the confluence of the Madi river. The sound of the siren reaches an area within 500 m radius from the siren. In the further stage of the project, topographic survey in the downstream river course and detailed hydraulic examination such as increased speed of the downstream water level in water discharge for power generation will be conducted. This impact is moderate in magnitude, local in extent and long term in duration.

- **Impact on White Water Rafting**

Regarding the potential impact to white water rafting, two types of impacts are considered; (1) During the non-power generation period, rafting activity would be disturbed in downstream river course since the fall on the water level and flow speed at certain sections of river course may occur due to regulation of water discharge from the dam. (2) During the power generation period, danger on rafting activity in the river and camp site for rafting tour at river reservation (or river side area) would be considered due to immediate increase of downstream water level due to discharge from tailrace outlet. The same situation can be considered in the sediment transport operation period. However, since downstream conditions and present rafting activities are not known in detail as well as its safety issue, type and degree of the impact for rafting activity could not clearly be identified in the study. In addition, the possibility to implement the



rafting activity in non-power generation period should be examined and discussed between NEA and rafting operators in the later stage of the project. The impact is moderate in magnitude, local in extent and long term in duration.

• **Withdrawal of Economic Activities**

The first and foremost impact during the operational phase is the withdrawal of economic activities which flourished during the construction phase since most of the construction related workforce will leave the project areas. However, it is likely that some economic activities will continue or be further promoted in these areas because of the relatively good accessibility to urban areas such as Damauli and Bhimad Bazaar. Considering this, the impact of the withdrawal of economic activities during the operational phase can be assumed to be moderate in magnitude, regional in extent and for short duration.

Table 5-14: Comparative Socio-economic and Cultural Impacts of Approved EIA and S-EIA

S. N.	Description	EIA	S-EIA	Remarks
1	No. Affected Households			
	• Land	838	960	Due to addition of muck disposal site
	• Structures	110	110	
2	Land acquisition			
	• Reservoir	108.89	108.89	Due to addition of muck disposal site
	• Risk Zone	6.51	6.51	
	• Project Facilities	35.82	54.69	
	Total	151.22	170.09	
3	No. of Structure	313	313	No change
4	Crop Loss	660.78 MT	688.79 MT	Due to addition of muck disposal site
5	Infrastructures (No.)			
	• Motorable road	2	2	Increase in no. of suspension bridge
	• Suspension bridge	6	7	
	• Foot trail	20	20	
	• Electricity distribution line	2	2	
	• Irrigation Canals	1	1	
	• Ropeway (twin)		1	
6	Community Structures			
	• Thati (Resting Place)	5	6	
	• Temples	1	2	
	• Cremation Site	1	9	
7	Schools	1	1	No change



6 ALTERNATIVE ANALYSIS

General

During the feasibility design process, several alternatives were examined for all project components. These alternatives were assessed on operational, economic, engineering and environmental aspects and are discussed in this section. Three best projects were selected from the inventory prepared, for the feasibility study through Coarse and Fine Screening and Ranking procedures. During the selection process, technical, financial and environmental criteria were considered. There are no changes in the alternatives studies as compared to the approved EIA report. The studies included in the approved EIA report have been described in following sub headings.

6.1 Alternatives Study

The following were the topics where alternatives were considered:

- ◆ Location and Design of Major Project Structures (Different dam height);
- ◆ Powerhouse Locations;
- ◆ Location of Construction Camps and
- ◆ No Project Options

Layout study and Comparative Full Supply Level (FSL) study were two kinds of alternative studies as described in the approved EIA report. The alternative studies were looked at from various aspects such as economic, financial, technical, and environmental and social aspects. The following sub-sections present the concerns, comparisons and conclusions for each major issue.

6.1.1 Siting and Design of Major Project Structures

6.1.1.1 Different reservoir level

This section summarizes the results of the comparison of resettlement impacts under different reservoir FSL scenarios between 375 and 435 m. As shown in Table 6.1 the overall resettlement effects will dramatically increase if the FSL changes from 415 to 425 m. The FSL above 425 m including the 10 m vertical height as risk zones will result in increased land acquisition such as 265 ha for cultivated land and 1160 metric ton loss of agricultural production, and an increment in the relocation of 160 people.

Table 6-1: Resettlement Effects with Different Reservoir FSL

Réservoir FSL + riser zone 10m	435 +10m*	425 + 10m	415 + 10m	405 + 10m	395 + 10m	385 + 10m	375 + 10m
Cultivated Land (ha)	499.92	265.55	151.22	111.69	94.05	79.78	71.1
Built up Area (ha)	3.93	2.545	1.7	1.205	0.74	0.355	0.36
Forest Land (ha)	615.71	543.06	480.09	424.5	375.31	325.79	282.81
Agricultural Production	2184.45	1160.35	660.77	488.04	410.96	348.61	310.68
Number of Affected Private Structures	920	515	313	250	217	215	210

Number of Affected Community Structure	32	15	7	5	4	4	4
Number of Affected Private Land Owners	1943	1276	838	734	647	589	584
Number of Affected Structure Owners	335	199	110	88	79	77	73
Number of Residential Structure Owners =Relocate	274	160	86	65	63	59	59

The more the resettlement impacts increase, the more social and environmental costs for mitigation will result. The comparison of resettlement and relocation costs is presented in Table 6.2. It is apparent that the compensation costs for private lands, structures and loss of agriculture production will increase to a large extent with the FSL above 425 m.

Table 6-2: Resettlement Cost with Different Reservoir FSL

Particular	Million Mrs.						
Réservoir FSL + risk zone 10m	435 +10m*	425 + 10m	415 + 10m	405 + 10m	395 + 10m	385 + 10m	375 + 10m
Cost Estimation for the Private Land (cultivated and built up)	2755.7	1602.16	999.51	801.83	712.82	640.82	598.15
Cost Estimation for the Structure	210.38	77.05	33.97	23.88	22.81	20.78	20.44
Cost Estimation for Agriculture Production Equivalent to one year production	2.16	1.17	0.65	0.49	0.42	0.35	0.31
Other Rehabilitation Compensation to Relocate	105.66	67.43	44.95	37.91	37.24	35.89	35.89
Transportation Allowance to affected Structure owners other than the affected residential structure owners	1.67	0.97	0.56	0.50	0.36	0.40	0.32
Monitoring for 10 years	1.80	1.80	1.80	1.80	1.80	1.80	1.80
Grand Total	3077.4	1750.6	1081.4	866.4	775.5	700.0	656.9

6.1.1.2 Design Capacity Optimization

FSL Options

Increment of the FSL even only by 10m would mean a considerable increase in resettlement and risk to major settlements like Bhimad Bazar, Rising Patan and Jaruwapani. However, by lowering the FSL by 10 m, the storage volume would decrease significantly but there would be significant reduction in land acquisition and displaced families.

Turbine Options

The output from both turbines is 71.8MW each with an effective head of 121.55m and specific speed of 189m-kW. The effective head was 113m, output of 64.1MW and specific speed 208m-kW in the feasibility study. The installed capacity of the plant is 140MW which was 127MW in the approved EIA. The increase in capacity is due to the increase in turbine output. Moreover, the increased capacity does not have further impact on existing environment as the reservoir area and other project facilities except muck disposal areas are same.

6.1.1.3 Dam type

Due to the narrow gorge two alternatives of dam types –RCC, concrete gravity and arch dam were considered during the project feasibility level study. Although the Arch dam was found to be possible, it would be rather risky in the Himalayan geology and would require a separate spillway arrangement that would entail additional costs.

Dolomite is the predominant rock type in the both the abutments of the dam although the dolomite is sound rock, at present it reacts with water forming small caves or karstic topographical conditions in the future. The karstic condition makes the rock mass weak in strength and a high seepage zone as well. Therefore, the abutments consisting of dolomite rock will not have the required strength to hold the arch dam foundation. Several small caves are still visible on both river banks at the surface. Due to the adverse geological condition for the construction of the arch dam, a concrete gravity dam has been preferred.

Beside this due to the narrow valley, a spillway on the top of the arch dam is not possible. A separate spillway on the left bank has to be proposed to safely discharge the PMF. The topographical condition of the spillway, approach channel and chute consists of steep slopes and need significant rock excavation and possess high risks during construction. The space is very limited in the dam site area and the disposal of excavated material will be a problem. In addition, there is a risk of slope stability. Hence, based on these factors, the concrete gravity dam is preferred and has been adopted for the Upper Seti Storage Hydroelectric Project.

6.1.2 Power House Options

Four alternatives for the powerhouse were studied during the feasibility study:

- Underground powerhouse with 927 m long headrace tunnel;
- Shaft option;
- Toe option; and
- Surface option.

For the toe option, the intake and waterway are embodied in the dam and the powerhouse is located at the left downstream side of the dam. This option was discarded due to poor geology and to increase the head and capacity of the project.

The underground powerhouse with 1162m long headrace tunnel option was selected as the best option due to good geological conditions and less impacts on the environment. Compared to other options less forests and less agricultural land will be affected by this option.

Likewise, the shaft alternative was not preferred due to the relatively high cost of the waterways and only a modest increase in energy generation.

The surface alternative was not selected due steep topography, unavailability of space creating a problem in disposing excavated materials.

6.1.3 Construction Camp Sites

The size of the construction work force for the THP is estimated to range up to 2500 workers in peak years. The estimate of the area needed to support the population is 10 ha. The actual size of the work force will vary depending upon the contractors and type of construction method.



Different layouts of the project facilities, specially the construction facilities, based on the GIS Map have been examined at site. The layout of the construction facilities were determined considering the following aspects to minimize the impacts on the communities of Beni Patan and Shivapur, which included:

- Locating the access road route under the Byas- Shivapur footbridge rather than through the village, with associated benefits of traffic separation;
- Shifting the spoil bank to the river side to reduce the affected area;
- Locating the permanent NEA camp at the southern end of the flat area and closer to the power station – it is not recommended to build a bridge across the Seti River at this location; and
- Shifting the main access road to uphill from the present road so that Project traffic is separated from schools and shops along the existing road in Beni Patan.

6.1.4 Timing and Phasing of Project Construction

The factors that come into play in the construction phase are numerous. They include optimization of the work schedules to provide the best utilization of labor and construction equipment; the necessary sequencing of civil construction activities; completion of diversion works during the dry season, and recognition of the limitations imposed on construction activities by heavy monsoons and river flows. In total 3 seasons are required to build the structures in the river. Other factors include consideration of the optimal timing for building of road access, river crossings, scheduling diversion activities in the river, clearing of lands for construction sites and camps, and head pond clearance.

There are some possibilities to schedule works that take place in more environmentally sensitive areas in periods where impacts will be lessened, and to maximize use of the local labor force. For example, there are some considerations for scheduling activities to avoid the most adverse impacts at sensitive ecological periods such as fish migration periods, wildlife breeding seasons; and in the social context, minimizing disturbance at critical times for farm activities (planting and harvesting) where local labor would want to return to their farmlands. Construction material or spill releases into the river would have to be controlled in dry seasons where the flow is reduced and the dispersion is low.

6.1.5 No project Options

Nepal possesses immense hydropower potential which has yet not be realized. However, the present situation is that Nepal has developed only approximately 890 MW of hydropower. The construction of the run-of-river type of projects will generate surplus power in the wet season while there is a deficit during the dry season. Therefore, the need for storage type of projects has been felt to fulfill the country's peak load demands.

At present, the Kulekhani hydroelectric project is the only storage scheme available for meeting the peak demand of electricity in the country. The rest of the schemes is all run-of-river type. Therefore, the THP will be able to fulfill the country's peak demand and reliable power supply to the country. Without the project, there will be deficit power which will lead to frequent load shedding especially in the dry season. In such a case, thermal power generation would lead to higher cost of generation apart from emission of noxious gases.

The optimization study including different alternative analysis has been carried out during detail design to determine the optimum capacity of the project.

7 MITIGATION AND ENHANCEMENT MEASURES

The following mitigation measures have been proposed to minimize the possible negative impacts identified during the study. The measures outlined at this time are intended to mitigate the potential adverse impacts of the project and enhance the positive impacts, which involve changes to the baseline conditions.

7.1 Physical Environment

The main impacts associated with the reservoir type of project will be firstly those related to land take. The major land take will be for the reservoir. The breakdown of the total land takes of 1034 ha for the different project facilities were summarized in Table 5-1 in Chapter 5 of the report. The minimization of land take where feasible, will be the primary mitigation measure.

The second category of physical impacts includes a range of potential, site specific or localized adverse effects, such as the potential for construction induced rockfall and landslides due to the fluctuation in the water level up to 27.8m in the dry season and due to construction blasting, drilling, vibration and slope cutting operations; alteration of localized drainage and storm runoff patterns, unplanned release of construction spoils in the river, and localized noise and air pollution. Stabilization of slopes using bioengineering works etc., controlled drainage system, construction and waste management are some of the measures required. Other concerns include the use and disposal of construction wastes and proper location and management of borrow pits.

7.1.1 Watershed and Drainage Conditions

The watershed management will include afforestation programs to limit slope erosion and sedimentation in the reservoir and constructing of check dams in tributaries, which will be transporting sediment into the reservoir.

7.1.1.1 Construction Phase

Approved EIA includes:

- Ground disturbances will be minimized
- Protection works such as retaining walls (revetment walls and gabion walls) will be constructed in critical areas near habitations especially in areas like Bhimad Bazaar, Rising Patan and Jaruwapani where slope failures are expected
- Compaction will be done on the dumped spoils and a slope of 1V: 2H will be provided.
- Wherever possible, bioengineering works will be undertaken in dumped areas, and all disturbed areas will be backfilled, covered with topsoil and fully re-vegetated.
- Top soil will be saved and stockpiled for reuse during re-vegetation especially in the area proposed downstream of the tailrace outlet.
- Catch drains to collect and sub-surface drains to divert surface water to stabilize gullies in areas prone to slides.
- Bioengineering with combination of civil structures will be considered for slope stabilization works required along the fragile stretch.

Bio-engineering works and re-vegetation will be implemented.

Additional mitigation in S-EIA includes:

A side drain will be provided for diverted natural drain during the construction of road as part of civil work of the project.



7.1.1.2 Operation Phase

Approved EIA includes:

- It is likely that the reservoir FSL of 415m and at higher elevation would aggravate the local landslides present throughout the upper reservoir area during the operation phase. It is proposed that the following actions will be undertaken:
- Watershed enhancement measures like afforestation programs, construction of check dams will be implemented
- Proper inspection of the shoreline erosion will be carried out.
- Protection embankment works with concrete blocks cover will be constructed in the vicinity of Bhimad Bazaar.
- Land acquisition program and stabilization of erosion prone in the risk zone area from Full Supply Level to 10-m high above will be implemented.
- Selective planting of ground cover and trees at the base of areas susceptible to erosion in tributary stream leading into the Seti River will be done.
- Land acquisition program and stabilization of erosion prone areas with suitable tree species in the vicinity of the Wantang Khola, the Pedhi Khola and Tutuwa will be done.

There is no additional mitigation on watershed and drainage condition during operation phase.

7.1.2 Land Take and Land use**7.1.2.1 Construction Phase**

The following mitigation measures have to be implemented in approved EIA report to reduce the impact on the land use:

- Permanent land take and natural slope disturbances will be minimized.
- Excavated materials will be properly dumped and disposed.
- Proper management and location of the project facilities, camps etc. Camps will be relocated in lower value cultivation land.
- Reclaim land use and maintain the existing land slopes specially along the access road.
- Bio-engineering along with civil structures to prevent erosion and landslides will be adopted.
- Issues of quarry site and crosser plant will be addressed through approved previous EIA and as per the GoN laws and regulations and norms and standards.

There is no further mitigation measures will be required to reduce the impact on the land use during construction phase as the reservoir area and others project facilities except disposal areas are same.

7.1.2.2 Operation Phase

Mitigation measure is not recommended.

7.1.3 Air Quality

The following measures are recommended in approved EIA report to control air pollution in the project area.

7.1.3.1 Construction Phase

Following mitigation measures are recommended in approved EIA:

- Spraying of road surfaces with water will be done to minimize the generation of dust.
- Maintenance of all vehicles and construction machinery will be done.



- Construction vehicles complying with GoN emission standards will be used.
- Mufflers to all vehicles will be provided.
- Batching plants, crushing plants and the diesel generators will be provided with controlled stacks.
- Respirators to the laborers working close to the construction sites will be provided.

There is no additional mitigation measures will be required to reduce the impact on the air quality during construction phase.

7.1.3.2 Operation Phase

No mitigation is proposed for the operation phase since the magnitude of impact will be low.

7.1.4 Noise and Vibrations

To minimize the impacts of noise and vibrations, the following measures have been proposed in approved EIA report:

7.1.4.1 Construction Phase

Following mitigation measures are recommended in approved EIA:

- Workforce camps will be located at least 500m from the construction sites to protect the people from noise pollution.
- Regular maintenance of all equipment as per manufacturers' specifications will be done
- Earmuffs or plugs to the laborers will be provided as per the requirement.
- Blasting operations will be conducted using limited detonators and in small lots.
- Compensation will be given to house owners if structural damages occur as a direct result of project construction.
- The construction work will be limited to daytime as far as possible.

There is no additional mitigation to reduce the impact of the noise and vibrations during construction phase.

7.1.4.2 Operation Phase

No mitigation required during this phase.

7.1.5 Microclimate

7.1.5.1 Construction Phase

No mitigation required during this phase.

7.1.5.2 Operation Phase

No mitigation possibly required.

7.1.6 Downstream impacts

7.1.6.1 Construction Phase

No special mitigation measures will be provided for the downstream impacts during the construction.

7.1.6.2 Operation Phase

The approved EIA report describes that the long-term mean monthly flow for the driest month of February at the intake site is 23.7m³/sec. As per the Hydropower Development Policy, 10% of this flow or the minimum required quantum as identified in the approved EIA (whichever is higher) has to be released. During the non-peak hours in the dry season, compensation flow equivalent to 10% of the minimum average flow of 2.4 m³/s will be released.

A warning system should be installed at the riverbank after the powerhouse to warn the people about peaking releases. The local residents should be educated about the functioning of the system.

Table 7-1: Mitigation Costs for the Downstream Effects to Communities

Environmental Impact	Mitigation Measure	Million NRs. (LS)
Downstream impacts to community activities	Siren network along the Seti downstream tailrace	3.5
	Awareness training on the safety measures to downstream areas	0.3
Total		3.8

Source: Approved EIA, 2009

There is no additional mitigation to reduce the impact on downstream during operation phase in SEIA.

7.1.7 Sedimentation and River Morphology

7.1.7.1 Construction Phase

To minimize the impacts on sedimentation and river morphology, the following measures are in approved EIA report:

- Progressive rehabilitation of disturbed areas - as distinct parts of the project are completed they will be progressively rehabilitated.
- Installment of sediment controls - progressive installation of sediment basins and traps will be done.
- Control of run-off - installation of permanent and temporary drainage works early in the construction program to collect and convey storm water will be done.
- Removal of topsoil from disturbed areas and stockpiles at identified suitable sites for later re-vegetation.

7.1.7.2 Operation phase

To minimize the impacts on sedimentation and river morphology during operation phase, the following mitigation measures have been proposed in the approved EIA report:

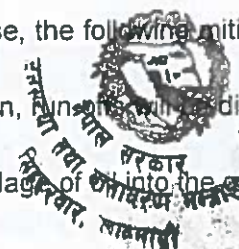
- Sediment control measures will be regularly maintained to an operable state.
- A laboratory to measure sediments regularly will be established near the project site.

7.1.8 Water Quality

7.1.8.1 Construction phase

To minimize the impacts on water quality during construction phase, the following mitigation measures have been proposed in the approved EIA report:

- The waste generated from batching plants, truck wash down, run-off will be diverted to the settling tanks before disposal.
- Berms will be made around the storage tanks to control spillage of oil into the ground.



- Spent oils will be collected and stored in suitable storage tanks and disposed through incineration.
- Toilets and septic tanks in all camps will be provided (4 toilets per 100 workers).
- Garbage and solid wastes generated by the workforce will be dumped safely away from water bodies.
- Construction and solid waste will be treated as per prevailing standards so that treated wastes will be harmless before they are disposed.

There is no additional mitigation to reduce the impact on the water quality during construction phase in S-EIA.

7.1.8.2 Operation phase

The approved EIA describes that the quality of the water in the reservoir will change significantly. Provision will be made to release the compensation flow from the top layer. The oxygen content at the top layer will be more. As a result of water quality tests, the concentration of the nutrient input from the upstream of the reservoir is high and there is a high possibility of reservoir eutrophication in future. Reduction of nutrient input from the upstream area is the most effective measures to decrease eutrophication. However, implementation of such measures will be difficult from the viewpoint of the limitation of the scope of project and related agencies. Thus, the measures for the eutrophication in the reservoir are examined in this section. Though a further detailed investigation is required to establish concrete measures the following alternatives are considered as conceivable measures in the reservoir at this moment:

- Installation of a fraction fence;
- Installation of a aerator;
- Installation of vegetated floating inland; and
- Input minerals

There is no additional mitigation measure included during operation phase in S-EIA.

7.1.9 Seismicity

7.1.9.1 Construction phase

No mitigation measures required

7.1.9.2 Operation phase

To ensure community safety, the Tanahu Hydropower Ltd. has appointed Lahmeyer International, Germany as a Project Supervision Contract consultant to review the dam design, structural safety, and seismic design to minimize risks and ensure public safety. Project is also preparing to recruit an independent Panel of Experts (PoE) who will be responsible for evaluating dam safety (design of dam, structural safety and seismic design), and the PSC will review the dam design, including the structural safety and seismic design before the commencement of construction works.

A site specific Seismic Hazard Assessment (SHA), where the local conditions are considered, has been carried out in the aftermath of April 2015 earthquake. As recommended by SHA the maximum PGA of 0.39 g (SEE) due to a Seti fault near the site has been considered during the detail design. The Maximum Credible Earthquake (MCE), also called the Safety Evaluation Earthquake (SEE), is the earthquake event which produces ground motions which the dam must be able to resist without any uncontrolled release of water from the reservoir

occurring. The SEE is the governing earthquake ground motion for the safety assessment and seismic design of the Main Dam and its safety-relevant components and appurtenant structures, which all must remain functioning after the occurrence of an SEE. The return period of the SEE was taken as 10,000 years as per ICOLD, 2010. As per ICOLD, the return period of the SEE was taken as 10,000 years.

For catastrophic events, minimum safety factor of has been considered as per Japanese Design Standards. In the event of a catastrophic total dam failure, people living close to the Seti River near Damauli District will be able to take safe refuge on land above 330 masl.

In addition to this, stability analysis on the dam has been done following the stipulations of "Structural Standards for River Administration Facilities", Ministry of Land, Infrastructure, Transport and Tourism of Japan (Japanese Structural Standards). Subsequently, 3D Analysis of the Dam has been performed to verify the safety status of the dam under extreme loading and compared the results with the international design standards like DIN, US Army COE etc.

7.1.10 Changes in Water Table

7.1.10.1 Construction phase

No mitigation measures required

7.1.10.2 Operation phase

No mitigation measures required

7.1.11 Spoil Handling and Disposal

7.1.11.1 Construction phase

To minimize the impacts of spoil handling and disposal during construction phase, the following mitigation measures have been proposed in the approved EIA report:

- Spoil will be dumped at designated sites.
- Construction of a dry stone gabion structure will be done at the toe of the spoil bank.
- The construction of a water collection system for the spoil banks to avoid free flow of run-off from the mountain slope over the spoil material will be done.
- Proper grading of the spoil surface with adequate drainage provisions after the closure of spoil disposal at the site will be done.
- Afforestation and bioengineering of the spoil area will be done after proper grading and drainage management.

There is no additional mitigation measure included during construction phase in S-EIA.

7.1.11.2 Operation phase

Spoil disposal sites will be rehabilitated progressively using suitable bio-engineering measures wherever feasible which is described in approved EIA report.

7.1.12 Downstream Impacts

The following mitigation measure has been proposed in S-EIA to minimize the impacts on downstream of dam:

- *For the protection from erosion of land of Jhapurtar village near the confluence of Seti and Madi rivers, river training works will be carried out. Similarly, protection work will be done along the bank of river from dam site towards the confluence of Seti and Madi rivers.*



7.2 Biological Environment

The biological environment of the project site will be directly affected through the removal of vegetation, creation of a reservoir and changes to river hydrology and by the influx of large construction workforce. However, an important consideration is that the lands to be directly acquired for project structures do not represent a unique habitat. That means the habitat in the project impact area is generally common to the other regions of Nepal. The following mitigation measures are recommended to minimize the adverse impacts on the biological environment that may arise during construction and operation phases of the Tanahu HEP (Upper Seti Storage Hydroelectric Project).

7.2.1 Vegetation

7.2.1.1 Construction Phase

Compensatory Plantation

As a compensatory measure for the loss of trees due to the project, plantation in 1:25 ratio will be carried out (as guided by (राष्ट्रिय प्राथमिकता प्राप्त योजनाको लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्ने सम्बन्धि कार्यविधि २०७४)). The compensatory plantation will be done for the loss of 90188 trees (pole and tree sized) from community forests.

A total of 2,254,700 seedlings of different species of plants will be planted as compensatory. Plantation shall be conducted in the land designated by the District Forest Offices of the concerned district. The suitable site for the plantation will be finalized after discussion with concerned Community Forest Users Group and District Forest Office. The proponent will request to concern District Forest Office to locate the land for plantation at early stages of project construction.

Other mitigation and enhancement measures for biological environment during construction and operation phases are same as that of the approved EIA of the project.

7.2.2 Wildlife

Hunting and trapping will be strongly prohibited by incorporating an appropriate clause in the Tender Documents (Contract Document) to ban hunting in the project area. The contractors should be advised to place information and warning signs at each construction site regarding the fauna. Furthermore, measures to control access to sensitive areas to avoid illegal hunting, poaching, fishing or illegal felling of trees need to be considered.

a) Environmental Awareness for Conservation (EAC)

Environmental Awareness for Conservation (EAC) is suggested to minimize the adverse impacts on local wild fauna. People need more awareness of the importance of fauna, conservation requirements and indirect impacts due to deforestation such as landslides and flooding. The project will facilitate the implementation of an EAC program with the help of local NGOs, CBOs, IUCN and other National organizations and possible partners for the program.

The labor force of the Project will be made conscious of the intrinsic value of wildlife. Due attentions will be provided to protect rare and endangered species of the Project area. Hunting and trapping of wildlife will be restricted to project areas and poaching will be banned. Common animals like mongoose, fox, jackal, squirrel and monkey will be protected by the local people, who should be encouraged through wildlife protection program.

Table 7-2: Mitigation Cost on Wildlife

Particulars	Total Cost (Million NRs)
Capture & Release of Wildlife including 2 Reptile Species (Green Pit Viper (Trimeresurus graminus) and Garden Lizard (Calotes versicolor))	0.5

7.2.3 Aquatic and Fisheries

The following mitigation measures and enhancement programs are recommended to minimize the adverse impacts on fish and aquatic life that may arise during construction and operation phases of the THP.

7.2.3.1 Construction Phase

a) Muck Disposal Plan

Spoil materials will be disposed at the proposed spoil disposal sites. Larger materials will be placed near the outside edge of the berm while finer phyllite materials will be placed in the inner areas. During the dry season when baseline turbidity is low, the river will be protected from any increase in suspended sediments. A detail muck disposal plan will be prepared throughout the construction period, and the spoil disposal at the proposed sites will be modified based on the monitoring results. Other options for spoil disposal sites as well as alternative uses of muck should be explored.

b) Water Quality Protection Measures

Water quality protection measures will be applied during construction and operation phases. The construction contractor will develop a waste management plan, which details the use, storage and disposal of toxic, solid and sanitary wastes and materials. All batching plant wastewater and truck wash-down will be diverted to a settling basin for treatment prior to discharge. The storage sites will be enclosed by dikes and storage areas will be lined to minimize potential surface and ground water pollution in the event of spills. Wastewater will be treated before mixed into the natural stream/river water before treatment. Used oils and lubricants will be collected regularly in drums/barrels or tanks to ensure safe disposal. Settling basins will be used to collect slurry for settling heavy particles and other materials, which can be recycled or incinerated.

7.2.3.2 Operation Phase

a) Riparian Release

The methods available to assess the relative merits of the proposed riparian release are in Stream Flow Incremental Methodology (IFIM Bovee 1982), the Tenant Method (1976), the NGRP Method (Northern Great Plains Resource Program 1974) and the Wetted Perimeter Method using outputs of HEC II simulations. In order to predict the impact of regulated flow hydrological methodology used by Montana or Tenant Method (Tenant 1976) used worldwide has been used in this study with modification adopted in the Kali Gandaki A HEP (EIA study). Flow conditions with different regulated flows are evaluated for different months.

The approved EIA indicated that with the release 2.4 m³/s of water the ecological condition of the river stretch between the intakes to the Madi Seti confluence will be minimum in January and April and fair from February to March. The riverine condition in July to August is optimum to outstanding due to the availability of higher flows than required for hydroelectric generation.

The aquatic habitat in the month of October to December and May to June will severely be degraded and aquatic life will survive only in pool sections of the Seti river.

b) Fish Trapping and Hauling Program

A fish trapping and trucking program is recommended in conjunction with the hatchery for the THP. This program is well developed and refined in most dam projects in European countries. The program is under implementation in the Kali Gandaki "A" Hydroelectric Project as a pilot scheme. This is low cost locally available labor-intensive technology and can be easily implemented in any dam project of Nepal. The program includes collection of migratory species downstream and upstream of the dam during the migratory season and released into the river to facilitate up and downstream migration. The fish trapping and hauling program will be suitable mitigation measures for such types of fish species.

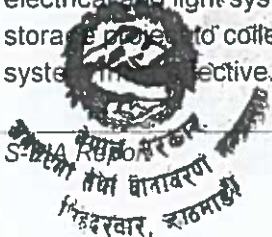
Fish trapping and hauling proposed in conjunction with Fish Hatchery for Tanahu Hydropower Project. Trapping and hauling program is well developed and refined in most of the European countries. It can be used for a variety of fish species and sizes. This is low cost locally available labour intensive technology. It can easily be implemented in any dam project. This program includes collection of migratory fish species below and above the dam during migratory season and release in the river to facilitate up and down stream migration. This program will be helpful to collect necessary brood stocks for proposed fish hatchery. Seti River provides suitable habitat for diverse species and breeding technology for many species is not available in Nepal. Therefore, trapping and hauling program will be a feasible mitigation measure for such fish species. The positive aspects of this program is that the local fishermen are traditionally involve in fishing practice and by minor refinement of traditional fishing gear and short training program can be easily implemented. Low cost, local employment opportunity, effectiveness for all migratory and resident species are the other beneficial aspect of this program. However, proper management and appropriate precaution to minimize the poaching and stress related mortalities will be required.

In addition to trapping and hauling program, a multi species fish hatchery will be established to breed migratory fish species particularly the IUCN red listed species such as *Tor putitora* and other species with apparent declining population. The details of fish hatchery development are discussed in the approved EIA (Sect 7.2.3.2 (e) and (f) and Appendix E).

Trapping and hauling and operation of fish hatchery will be complementary to each other.

c) Trash Rack

There are a number of mitigation options practiced to minimize fish entrainment in the powerhouse turbine. Some of the practiced options, though feasible from the technical point of view are too costly such as vertical travelling screens, drum screens, inclined screens and stationary screens, while some others are not technically feasible to be incorporated in the selected intake design such as collector channel screening and flushing. Some other options such as electrical fields, lights and acoustical systems are still in the testing phase and their effectiveness to deter fishes is still not soundly based. Besides, the change in water's, physical conditions (turbidity, suspended solids) in the dry and wet season affects the efficiency of electrical and light systems. (Bell 1990). The design engineer will visit and consult the existing storage project to collect practical experiences with operation/design staff of NEA to make the system more effective. This issue will be covered in the advance phase of the project.



d) Enforcement of Aquatic Animal Protection Act

Fish aggregate in the intake and powerhouse will be susceptible to legal and illegal harvests. The project management will develop some enforcement mechanism in association with the local administration, local leaders and Fisheries Development Division, GoN and Nepal Fisheries Society (NEFIS) to ban illegal fishing in the project area.

e) Fish Hatchery Development

The establishment of a fish hatchery is one of the most acceptable mitigation measures for dam projects on the native fish fauna. Hatcheries generally play an important role in fish conservation and reservoir fishery development in developing countries. In recent years their efficiency has been increased with better knowledge of the biological and reproductive requirements of fishes. In Nepal there are 3 commercial fish hatcheries namely Pokhara Fisheries Research Center, Trishuli Fisheries Research Center and Fattepur Fisheries Development Center. Recently a fish hatchery is under construction in the Kali Gandaki A Hydroelectric Project undertaken by Nepal Electricity Authority. The Kali Gandaki A hatchery aims to propagate Mahseer, Copper Mahseer, Snow trout and other indigenous species. A similar hatchery will be developed for USSHEP.

f) Establishment of Hatchery

A hatchery generally plays an important role in fish conservation and reservoir fishery development. The stocking of fry of indigenous long distance and mid-range migratory species in the reservoir and upstream of the reservoir will replenish the natural population affected by the project. The fish hatchery will also compensate the unavoidable loss in the Seti River and its basin also.

The proposed hatchery will produce fish fry of migratory fish species as well as other declining fish species. Indigenous fishes will include mahseer (*Tor tor* and *Tor putitora*) copper mahseer (*Neolosocheilus hexagonolepis*), snow trouts (*Schizothoracichthys progastus*, *Schizothorax richardsonii* and *Schizothorax plgiostomus*), minor carps (*Labeo dero* and *Labeo angara*) and other economically important species. The hatchery development also includes breeding and rearing facilities of exotic carps to promote aqua culture in the area and for reservoir fisheries development. The exotic species includes planktivores and herbivores carps such as silver carp (*Hypophthalmichthys molitris*), bighead carp (*Aristichthys nobilis*) and grass carp (*Ctenopharyngodon idella*). The proposed hatchery will be a small size raceway type structure so that it could be run by lifting the water from the Seti River. A deep tube well will also be a suitable option. The fry and fingerlings produced in the hatchery will be stocked in the reservoir and upstream of the reservoir. The hatchery will produce 2.5 million fry annually

g) Strengthening of Kaligandaki 'A' Hatchery

This program is recommended as an alternate to a fish hatchery. It is proposed that the Kali Gandaki A hatchery would be expanded to cater for the fisheries mitigation measures as it was originally proposed for such purposes. The capacity of Kali Gandaki 'A' Project's fish hatchery can be readily doubled and production of native fry and fingerlings negotiated with the operator, who will be under contract to NEA. The effectiveness of the applied measures may be varied in terms of success depending upon the local field conditions, expertise applied and behavior of the existing aquatic fish species. Any plans to provide for fish trapping and hauling or a fish ladder structure at the dam are both uneconomical and could in no way

compensate for the impacts of the Project. It is proposed that proper and adequate provision of a fish hatchery is the most viable method. However, the implementation of the fish hatchery program needs the further detail study.

Initially on 3 locations the Seti river (downstream of Damauli), Phedi Khola (a reservoir tributary) and Madi Khola (just upstream of the quarry site) were examined for the fish hatchery facilities. The costs of a hatchery program for 5 years vary at these sites between NRs. 119.3 million and 129.8 million. From these results, the extension of the fish hatchery at Kaligandaki A Project is proposed as an attractive alternative for the Project. The Pokhara Fisheries Research Center at Pokhara can also be considered for the same purpose.

h) Open Water Stocking Program

The open water stocking program is recommended to explore the reservoir potential and to minimize the impact on indigenous cold water fishes. The open water stocking in the reservoir will be conducted to utilize the potential of the reservoir as well as to mitigate fish loss. Due to thermal stratification in the reservoir different habitats will be available for an open water stocking program where different species can be introduced. The estimated area for open water stocking in the reservoir is 726ha.

i) Stocking in Upstream of Reservoir/ Riverine Condition

The open water stocking will be done to minimize the impact of the project on the native fauna. The open water stocking will include the indigenous current loving fish. The estimated area available in upstream of reservoir to Pokhara valley. Snow trout, copper mahseer and mahseer are recommended for open water stocking program. The estimated number of fry for open water stocking program is Rs. 1.9 million annually.

j) Cage fish Culture

The cage fish culture will replace the loss of fish catch in the Seti River. This is also helpful in maintaining the fish population and protein consumption of the local people. According to available information 10 to 20% of the reservoir potential will be used for cage fish culture. About 5% of this reservoir potential is most viable keeping in mind the reservoir operation specially the drawdown. In the first phase of cage fish culture development 1% of the total area is proposed for cage fish culture.

Kulekhani is the only reservoir, which is utilized for fishery development. The experimental results show that Indrasarobar reservoir is suitable for commercial fish culture and fish production of 5 to 6kg/m³ was promising in comparison to cage fish production in the Lake of Pokhara (3- 4 kg/m³). Fisheries Development Center Markhu initiated commercial fish culture from 2045 by involving the local people.

Although the cost for the hatchery development and research would essentially be a part of the operation phase, the costs on this item will be disbursed at the start of the construction works and preparation of hatchery facilities and supplying of fish fry will be ready for the dam closure period.



Table 7-3: Mitigation Costs for Fisheries

S.N.	Particulars	Unit Cost (NRs.)	Total Cost (Million NRs.)
1	Financial and Technical Assistance to Kali Gandaki A hatchery for added production & facility development and research for Upstream & Downstream Stocking in Seti River system	As Per Estimate	73.6
2	Annual release of purchased exotic carps to Seti reservoir	2/fishfry	1.9
3	NEA extension program for fisheries and mitigation to local fishermen	Lump sum	1.0
Total Estimated Cost (Million NRs)			76.5

7.2.4 Cost for Biological Environment

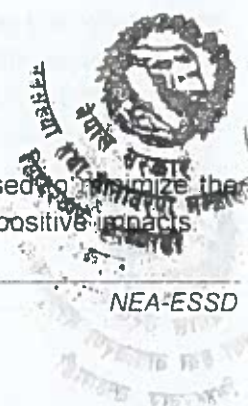
The total cost for biological environment is NRs. 475,292,500.

Table 7-4: Summary of Comparative Mitigation in Approved EIA and S-EIA

S.N.	Description	Approved EIA	S-EIA	Remarks
1	No. of Trees to be felled (except private trees)	About 160,000 (actual 159312)	90188	As per census, decrease in the no of trees of CFs in the reservoir area and project facilities sites (sapling has not necessary to include for compensatory tree plantation (sapling was 91383 in CFs in the reservoir area and project facilities sites, total no. with sapling is 181571)
2	Forest Area loss (ha)	422.59	422.89	Increased due to addition of muck disposal sites
3	Compensatory plantation			
	1:25	About 4 million (actual 3982800)	2,254,700	As guided by राष्ट्रिय प्राथमिकता प्राप्त योजनाको लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्ने सम्बन्धि कार्यविधि २०७४
4	Compensatory Plantation Cost (NRs)	287,868,000 (including private forest)	394,572,500	NRs280,000/ha replacement cost as per approved EIA
5	Other Mitigation Cost (NRs)			
	Vegetation Clearing	3,720,000	3,720,000	No Change
	Wildlife	500,000	500,000	No Change
	Fisheries	76,500,000	76,500,000	No Change
6	Total Mitigation Cost for Biological Environment	368,588,000	475,292,500	

7.3 Socio-economic and Cultural Environment

The following mitigation and enhancement measures have been proposed to minimize the possible negative impacts identified during the study and to enhance the positive impacts.



7.3.1 Acquisition of Land and Property

7.3.1.1 Construction Phase

The construction of the THP requires the permanent acquisition of 151.2ha of cultivated land owned by 838 families and approximately 20ha of temporary land acquisition. Out of 838 HHs, 86 lose their residential houses due to the construction of the reservoir and project facilities sites. The proponent will provide appropriate compensation to all of the PAFs at the prevailing market price. Based on the discussions with the local people, observations at the site and from the conclusions made by the environmental team, compensation will be provided using two methods, namely:

- Cash Compensation; and
- Land-for-Land and House-for-House Compensation.

The proponent will provide appropriate compensation to all of the PAFs at the prevailing market price. The summary of existing cost for socio-economic and cultural environment is presented in following table.

Table 7-5: Summary of Mitigation Cost for Socio-economic and Cultural Environment

S.N.	Description	Cost (million NRs)
1	Land acquisition (170.09ha)	1208.61
2	Structure	33.972
3	Agriculture production	1.721
4	Other rehabilitation compensation to relocatee	44.95
5	Transportation allowance to affected structure owners other than the affected residential structure owners	0.56
6	Monitoring for 10 years	1.80
Total		1291.373

Resettlement plan of seriously project affected families (SPAFs) has been shown in appendix E

7.3.2 Other Mitigation Measures

- The following mitigation measures will be applied during this period to compensate the affected HHs and loss of arable land:
- A thorough examination of individual household conditions will be done before determining the compensation amount for permanent land take;
- Issues of compensation will be addressed through the GoN laws and regulations which enforces the Compensation Fixation Committee (CFC) to make fair determination of compensation requirements for loss of land, property and other more temporary disturbance to crops, livestock and community areas;
- Fair and timely compensation will be given for loss or damage caused by project activities. Compensation will be provided, in accordance with the Land Acquisition Act, 2034;
- The main mitigation measures concerning the temporary take of land will be developed by the project standard rent agreement forms, which will identify the rent based on the productivity and which will be adjusted annually in line with local price variations;
- Rental compensation will be provided for those HHs who lose their houses for at least 1year period. In addition to this, land registration cost and other administrative cost associated in buying new land for the construction of their new houses will also be compensated;



- The project management will mediate potential conflicts concerning loss or damage caused by the project activities;
- Activities to increase the yield and production in surrounding farmlands will be implemented as an enhancement program;
- Each of the HHs whose land will be acquired temporarily will be provided with adequate compensation for the temporary loss of yield. Furthermore, they will be given first preference for jobs during the project construction period;
- After the completion of the project, the leased land will be restored and returned to the respective landowner
- Fair and timely compensation for loss or damage of standing crops, fruits and other trees will be provided. Compensation will be provided as per the decision made by the CFC.
- The HHs without entitlement will be provided with vocational training, additional assistance cost for structure and cash compensation.

7.3.2.1 Operation Phase

No mitigation measures are required during this phase.

7.3.3 Affected Infrastructure

The project proponent will construct infrastructures and community structures at the appropriate location in coordination with the local users and local governmental bodies such as the District Development Committee (DDC) and Distribution Consumers Service (DCS) of Nepal Electricity Authority, etc before the construction of the project.

7.3.3.1 Water Supply, Sanitation and Health

Due to the construction activities, the existing water supply system may be damaged and sources of supply may be disturbed. In addition, due to the influx of approximately 2500 workers in this small settlement area, the pressure on the existing water supply, health and sanitation system will increase. Thus, to mitigate these problems, a systematic and adequate water supply system will be developed in co-ordination with the local community. While doing so, community participation will be sought. A joint program on health and sanitation will be launched in association with the existing NGOs and INGO and other local communities during the construction phase. In addition, health posts will be strengthened in association with the District Public Health Office. Prior to this, certain medical facilities will be provided by the project health centers.

Construction Phase

Implement community health and sanitation programmes and campaigns as follows:

- A separate water supply system will be provided in the construction camps.
- Improvement and assistance will be given to the existing local health care facilities.
- Family planning education programmes will be provided.
- Health check-up for workers and documentation of health status will be done.
- Health care facilities at the camps with sufficient labor and medicines to control of an epidemic outbreak will be provided.
- Awareness programmes against girl trafficking and STDs will be given.
- Free condoms to workforce and local villagers will be provided.



7.3.3.2 Additional Suspension Bridge Construction Phase

Suspension bridge will be constructed in appropriate location with consultation of local people. It has no recorded adverse impact, therefore not proposed mitigation program.

7.3.4 Safety and Occupational Health

Approved EIA suggested following mitigation measures for construction and operation phase.

7.3.4.1 Construction Phase

- Warning systems in the blasting sites, and key project sites in case of unprecedented hazards will be provided.
- Occupational health program and clinical health services will be implemented
- Fencing of high-risk construction sites and provision of signboards to prevent accidents will be done.
- The entrance without permission into hazardous areas will be prohibited.
- First aid kits at each of the working sites will be provided.
- Fire-fighting gear at vulnerable areas and training to the involved workers on fire-fighting will be provided.

7.3.4.2 Operation Phase

Warning systems in the downstream area during water level fluctuations during the operation period of the project will be provided,

7.3.5 Vulnerable Groups

7.3.5.1 Construction Phase

Women will benefit from the project activities and get equal opportunities for jobs in the project. Therefore, special steps while implementing mitigation measures will be taken:

- Employment for women from the project affected areas will be encouraged.
- It will be ensured that the employment regulations do not conflict with the Nepalese laws and international regulations and conventions signed by Nepal.
- It will be ensured that salaries, job facilities, incentives to women are at same level as men.
- Awareness and information campaigns for encouraging women's participation in project regarding recruitment procedures, level of wages and type of work will be carried out.
- Supervision and action will be taken against any increase in girl trafficking in the area.
- It will be ensured that no children under the age of 16 are employed in the project.
- Child Concern Program in the affected area will be supported.
- Men from occupational castes identified during the baseline study will receive priority for employment.

7.3.5.2 Operation Phase

No mitigation measures are required during this phase.

7.3.6 Indigent Workers

The following mitigation measures are recommended to mitigate during construction and operation phase in approved EIA.

7.3.6.1 Construction Phase

- The following mitigation measures are proposed at this phase:
- Provision for recreational and cultural events for workers, TVs, Radios, etc. will be done.
- Special instruction to workers will be given to act in a responsible manner during and after working hours, respecting the rights, properties and practices of the local people.
- Prohibition will be made on all workers to live outside the construction camps.
- Prohibition will be made on the use of alcohol and gambling in the project worksites, camps and nearby villages.
- Prohibition on the movement of labourers in the villages after 7 PM will be made.
- Provision of adequate security (police patrolling) in the construction affected areas and settlements will be made.

7.3.6.2 Operation Phase

- Trainings to maximize the skills of the local people to hold permanent jobs with the project will be initiated to minimize the tensions between the permanent staff and local communities. Priority will be given to women and members of the directly affected HHs.

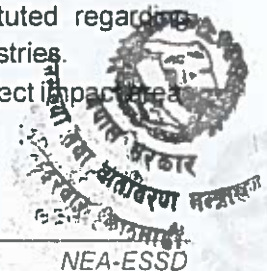
7.3.7 Enhancement Measures

THP will provide the local communities and the region itself with numerous opportunities for socio-economic development. Direct and indirect job creation may be considered the primary benefit, there are nevertheless a range of opportunities which will open to government, private sector and the local communities to both build upon, and enhance positive impacts of the project. However, to promote equity and justice during the utilization of benefits, the following will be considered.

- **Rural Electrification**

The project area of THP including 220kV transmission line is still not electrified or partially electrified in some places. The rural electrification is a priority development demand of the communities living in the surrounding VDCs of the THP development area. Project intends to electrify the nearby villages which will be affected by the project. The THL for and on behalf of NEA at various consultation meetings and public hearing meetings have made a commitment with the local communities of the surrounding areas for the rural electrification as a part of the community development plan. Apart from this the hydropower policy of the GON stipulates rural electrification of the hydropower project development area as one of the policies of the hydropower development. People living in 17 VDCs (Arunodaya, Baidi, Chimkeshwori, Chichipe, Deurali, Dharampani, Gajarkot, Ghiring Sundhara, Majhkot, Rising Rani Pokhari, Kahun Shivapur, Kihu, Kotdurbar, Kota, Sabung Bhagwatipur and Bhirkot) will be benefited by the program.

- Funds and technical support will be provided for capacity building of the affected VDCs, DDCs and community-based organizations
- Mechanism to resolve inter- and intra-district conflicts will be instituted regarding matters of jobs, market opportunities, and licenses for small scale industries.
- Rural electrification will be prioritized on the basis of proximity to the project impact area.



- Formulation and implementation of transparent rules and regulations will be done to expedite an equitable intra-district distribution of royalties. VDCs most affected by the hydroelectric project will receive a fair share of the benefits from the project.
- There will be accountability on the part of the national government, the DDC and the VDCs regarding the expenditure of royalties. Regular auditing and monitoring of impacts of royalties on growth, social equity and environmental justice will be done.

Table 7-6: Cost Summary for SAP

S.N.	Proposed Social Programs	Million NRs.
1	Replacement of Affected Infrastructures by the Reservoir	90.5*
2	Community's Initiative Support Program	52.13
3	Skill Enhancement and Employment Program	10.14
4	Agricultural Development Program	27.51
5	Community/Public Health and Education Enhancement Program at the Project Construction sites	9.66
	Community/Public Health and Education Enhancement Program at the Reservoir affected VDCs	6.27
6	Women Development Program	13.03
7	Watershed Management Program	12.31
8	Rural Electrification Program	19.55
Total		241.10

Note: * Total cost for including one additional bridge.

The comparative cost for socio-economic and Cultural environment is presented in Table 7-7.

Table 7-7: Comparative Existing and Approved EIA Cost

Mitigation & Enhancement Measures		Mitigation & Enhancement Measures			Remarks
Approved EIA	Cost (million NRs)	Final Configuration	Additional Cost (million NRs.)	Total (million NRs.)	
A. Mitigation Measures					
Land acquisition (151.22 ha)	999.51	Land acquisition (170.09ha)	209.1	1208.61	
Structure (313) and 86 will be displaced	33.972	Structure (313) and 86 will be displaced	No Change	33.972	
Agriculture Production (660.78 MT)	0.647	Agriculture production (688.79 MT)	1.074	1.721	Existing cost is calculated as average Price NRs. 25,000/MT
Other Rehabilitation Compensation to Relocate	44.95	No Change		44.95	
Transportation Allowance to affected structure owners other than affected residential structure owners	0.56	No Change		0.56	
Monitoring for 10 years	1.80	No Change		1.80	
Infrastructure and Community Structures (Project will relocate with co-ordination of DCC, VDC, local users)		No change			
Sub Total A	1081.4			1291.373	

Mitigation & Enhancement Measures		Mitigation & Enhancement Measures			Remarks
Approved EIA	Cost (million NRs)	Final Configuration	Additional Cost (million NRs.)	Total (million NRs.)	
B. Enhancement					
Replacement of Affected Infrastructures (Motorable road, suspension bridge, ropeway, foot trail, electricity distribution line and irrigation canals) by the Reservoir	85.5	Changed by 5 million NRs.		90.5	
Community's Initiative Support Program	52.13	No Change		52.13	
Skill Enhancement and Employment Program	10.14	No Change		10.14	
Agricultural Development Program	27.51	No Change		27.51	
Community/Public Health and Education, enhancement Program at the Project Construction sites	9.66	No Change		9.66	
Community/Public Health and Education Enhancement Program at the reservoir affected VDCs	6.27	No Change		6.27	
Women Development Program	13.03	No Change		13.03	
Watershed Management Program	12.31	No Change		12.31	
Rural Electrification Program	19.55	No Change		19.55	
Support for relocation of cremation sites (total no. 9)	4.5	Changed by 4.5 million NRs.		4.5	
Support for upgrading religious sites				2.0	
Sub-total B	236.1			247.6	
Grand Total	1317.5			1538.973	

Table 7-8: Comparison Matrix for Environmental Protection (mitigation and Enhancement)

S. N.	Environmental Protection	Approved EIA (Million NRs)	S-EIA (Million NRs)
1	Physical	3.8	3.8
2	Biological	368.588	475.292
3	Socio-economic & Cultural	1317.5	1538.973
Total		1689.888	2018.755



8 ENVIRONMENT MANAGEMENT PLAN

There is no change in the Environmental Management Plan (EMP) outlined in the approved EIA except a small addition on the grievance redress mechanism. According to the approved EIA, the cost for EMP monitoring is 53.51 million NRS and Environmental Auditing is 51.38 million NRS which are addressed in Chapter 9, Section 9.2.4.1 and 9.3 of approved EIA report respectively.

8.1 Grievance Redress Mechanism

Approved EIA did not include a process to handle complaints and grievances on social and environmental issues. Hence, a grievance redress mechanism is included in this Supplementary EIA, as part of the required producers during implementation. A grievance redress mechanism (GRM) will be established to receive and facilitate the resolution of affected people's concerns, complaints, and grievances on social and to address their concerns. The GRM will have three levels, with time bound schedules to function.

8.1.1 First Level of GRM

The Public Information Centre (PIC) at the VDC level will be the first intervention to address the grievance. Many grievances can be resolved by providing correct and complete information. The PIC will have full-time staff with full authority to listen and to provide information to AP.

8.1.2 Second level of GRM

Should the grievance remain unsolved, the PIC officer will forward the complaint to the Safeguards Unit at THP. The person filling the grievance will be notified by the officer that his/her grievance was forwarded to the safeguards unit. Grievances will be resolved through ongoing interaction with the affected persons, with THL answering queries and resolving grievances regarding various issues such as social and livelihood impacts and environmental issues such as social and livelihood impacts and environmental issues. NGOs and Safeguards Unit of THP will undertake corrective measures at the field level for social and livelihood issues within seven days, and environmental safeguards staff will do likewise as required.

8.1.3 Third Level of GRM

Should the grievance remain unsolved, the issue will be referred to the Grievance Redressal Committee (GRC). The GRC will be headed by Project Director and shall consists of members of the concerned VDCs/municipality, affected persons, NGOs and local area committee. The affected persons can present his/her concerns/issues to the GRC. The GRC will meet as necessary when there are grievances to be addressed. The GRC will suggest corrective measures at the field level and assign clear responsibilities for implementing its decision within 15 days.



9 PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

As key stakeholders in development, the citizens have right to know and to be involved in information exchange and decision-making that affects their lives, resources and properties from implementation of a development project. This citizen right is protected by the Right to Information Act, 2064 BS (2007), Right to Information Rules, 2065 BS (2009) and Environmental Protection Regulation 2054 BS (1997). Public consultation and information disclosure from the beginning is also important to reduce misunderstandings and successful implementation of a project. It is a process of both information giving and listening issues and concerns of public for planning and successful implementation of a hydropower project with full support of the stakeholders. Therefore, the project has given high emphasis to public consultation and information disclosure throughout the S-EIA process.

9.1 Consultation and Participation

During the consultations, the participants were requested to express their views, concerns/issues regarding the project as well as they were informed regarding the project and its activities. Information such as project purpose, project type, impact area, likely impacts and potential opportunities due to project implementation were provided to the people during the consultation. During the field visits, emphasis was placed on consultation with affected communities and people living in adjoining areas, to inform them about the proposed project and give them an opportunity to express their views. The participants of the consultations were project-affected families, farmers, businessman, jobholders, wage labors and students of the project affected VDCs. Altogether 88 participants of the project area had participated in the PRA. Of the participants 70.44% were male and 29.56% were female. The name list of the participants is given in Appendix B.

Table 9-1: Public Consultation Conducted in Project Area

VDC	Location	Date	No. of Participants		
			Male	Female	Total
Majhkot-8	Majhkot	2073-1-13	10	3	13
Jamune-6	Ravichandra Primary School	2073-1-15	4	4	8
Kotdarbar-8	Gothadi	2073-1-16	5	2	7
Bhimad-1	Bhimadbazar	2073-1-17	9	1	10
Rishing Ranipokhari-9	Rishi Patan	2073-1-18	10	3	13
Kahun Shivapur	Beltar	2073-1-19	8	-	8
Chhang	Chhangpatan	2073-1-20	2	6	8
Byas Municipality	Benipatan	2073-1-21	14	7	21
Total			62	26	88

Source: Field survey, 2016

9.2 Key Issues/Concerns raised in Public Consultation/Meetings

All the local people of the project area have positive attitude regarding the project. They suggested quick construction of the THP realizing the need of hydropower development for regular supply of electricity and local development. During the community consultation several issues and concerns were raised by the people. The major issues/concerns are related to employment, livelihood support, local development, transparency in project activities and environment protection.

The other issues are adequate compensation, implementation of mitigation and enhancement measures and community participation in the project activities. The concerns/issues of local people have been incorporated in relevant sections of the S-EIA. The issue of share is not covered in this study since it is beyond the scope of S-EIA. The key issues/concern raised by the local people during community consultations is summarized in Table 9-2.

Table 9-2: Summary of Key Issues/Concerns of Local People

S.N.	VDC	Details of issues/concerns
1	Majhkot	Employment to local people as per their skill Skill development training IG activities for women (veg. production, goat, livestock, coffee,) Support for market management Rural electrification should be carried out.
2	Jamune	Employment to local people as per their skill Program based on Fishery and Tourism should be carried out Support on Local development Siddhabatasan CF will lose large number of tress so new technique should be carried out for conservation of CF. Existing road should be upgraded
3	Kotdarbar	Rural electrification should be carried out. Support for local development. Affected infrastructure should be relocated. Skill development training and employment should be provided for local people
4	Bhimad	Project should be constructed with no impact on Bhimad bazar Bhimad bazar should be load shedding free area.
5	Rishing Ranipokhari	Good compensation for land and assets Protect/conservate cultural and religious places Relocation of affected infrastructure and support for local development Provide skill development training and employment to local people as per their skill Support for enhancement for tourism activities
6	Kahun Shivapur	Level of road is higher than the settlements so the impact should be minimized Likely impact of soil erosion is expected in the confluence of Seti and Madi river, due to diverting Seti river. Provide skill development training and employment to local people as per their skill Support for Local development.
7	Chhang Patan	Good Compensation for land and structures. Employment to local people as per their skill Support for IG activities Support for skill development training to women
8	Byas Municipality	Construction activities should be carried out with the coordination of local people. Transparency on project activities Support for Parashar Ashram and cremation site. Protect/conservate cultural and religious places (temple/ monastery)

Source: Field survey, 2016



9.3 Public Hearing

During the S-EIA report preparation, Public Hearing in the project affected area is mandatory. The objective of this rule is to assure full public involvement through the solicitation of opinions and suggestions concerning the contents of the EIA Report. The interim constitution of Nepal also guarantees citizen of right to information of public interest. Environment Protection Act, 1997 and Environment Protection Rules, 1997 further elaborate right of stakeholders to participate in S-EIA process.

9.3.1 Introduction

The public hearing program for the S-EIA of THP was organized in the project site at Kahun Shivapur VDC -1, Jhhaputar village of Tanahu district on Shrawan 17, 2073 (August 3, 2016). The program was chaired by Mr. Kush Bahadur Thapa, Chairman of School Management Committee. Chief District Office Mr. Dipak Subedi, representative from MoPE, MoEn, DoED, DDC, District Forest Office and NEA-ESSD participated in the program. Other participants included the representatives from political parties, local youth clubs and journalist of local media. Besides, local communities and the members from affected families participated in the program.

9.3.2 Objectives of the Program

The objectives of the program are:

- To inform the local people, line agencies, NGOs and other stakeholder on the technical and environmental aspects of Project.
- To update the local people about the present status and on-going activities of the Project.
- To receive information about public concerns and views.
- To revise the S-EIA report based on the concerns of local people.

9.3.3 Approach and Methodology

Following methodologies were used to conduct the Public Hearing program;

a) Preparation of Brochure

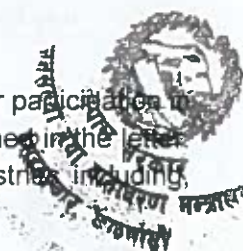
A brochure with relevant information about the S-EIA findings of the proposed project was prepared in Nepali Language and distributed to the participants of the public hearing program. The brochure contained the relevant information about the background of the project, its technical salient features and brief environmental description. The environmental description includes brief baseline condition of the project area, potential beneficial and adverse impacts, proposed mitigation measures, environmental management plan as well as environmental monitoring and auditing of the project.

b) Publication of Notice

A notice regarding the program was published in district level newspapers and broadcasted from local FM (Appendix C-I).

c) Request Letter to Line Agencies

Request letters were sent to the concerned government line agencies for their participation in the program. The date, venue and the time of the program was also mentioned in the letter. These letters were sent to the concerned government agencies and ministries including, MoPE, MoEn, DoED, affected VDCs, DDCs and CFUGs.



d) Arrangement of Program

Jhaputar of Kahun Shivapur VDC was selected as the site/venue for public hearing program to ease the people to participate from the project affected areas. One team was deployed with the coordination of ESSD, to the site for necessary arrangement for the program.

e) Registration of Participants

The participants were requested to register their name, address and occupations in preformatted table at the registration desks. The brochure were distributed to the participants and asked them to take their seat. The list of participants is given in Appendix C-II.

f) Response to the Queries

The queries and suggestion from the public were obtained through written slip (Appendix C-III). The project Manager and ESSD-staffs responded queries and concerns of participants.

g) Recording of the Program

Audio recording of the public hearing was done. Photographs of the program are attached in Appendix C-IV. The coverage of the public hearing program in local print media is presented in Appendix C-V.

Description of the Program

The Public Hearing program was conducted as mentioned as below.

- The Public Hearing program started at 11:30am on Shrawan 17, 2073 (August 3, 2016) at Jhaputar, Kahun Shivapur VDC of Tanahu district.
- Sitting of Chairperson, Chief Guest and other in dais;
- Project Manager commenced technical presentation of the project
- The finding of the SEIA study and objectives of the program
- Views of the representatives, political parties, local governmental line agencies, local affected community
- Inquiries and responses of the local people
- Responses to the queries and Closing Speech.

The EIA presentation informed the local people about the major impacts, mitigation measures, compensation procedures and enhancement measures. Following the presentation, Chief District Officer Mr. Dipak Subedi, representatives from MoPE, MoEn, DOED, various political parties, members of the civil society, representative from various local NGOs and representative from affected groups expressed their view and concerns. They encouraged the local people to take benefit of the opportunity to express their concern with regard to the project in order to maximize the benefit and minimize the project related impacts. At the end of the meeting a question and answer session was held where the people actively participated. Inquiries and responses of the local people mostly focused on:

Table 9-3: Summary of Key Issues/Concerns of Local People

S.N.	Key Issues /concerns	Description
1	Soil erosion/Downstream release/ Natural drainage	<ul style="list-style-type: none"> • The mitigation measures to protect Bhimad Bazaar from erosion should be seriously considered and undertaken • Impact on downstream release • Impact on natural drainage due to road construction in Jhaputar settlement of Kahun Shivapur VDC

S.N.	Key Issues /concerns	Description
		<ul style="list-style-type: none"> The flow of discharge will decrease in Seti river and chance of soil erosion in Jhaputar settlement
2	Compensation	<ul style="list-style-type: none"> Compensation should be given on the basis of prevailing market price Full compensation of government land (Ailani) should be given to the non-titleholders
3	Livelihood	<ul style="list-style-type: none"> Employment to local people as per their skill Agriculture training program Skill development training to the affected families
4	Infrastructure development/ community support/Tourism/Religious sites	<ul style="list-style-type: none"> Various development needs such as support for drinking water and schools should be considered and undertaken. As one of the alternative mode of transportation for inundated roads, due consideration should be given to road construction. Support for Parashar Ashram, cremation site and protect/conservate other cultural/religious sites. Rural electrification to the surrounding villages. Mitigation measures for fisheries should be addressed. Particularly, fishery development activities should be carried out in reservoir areas
5	Others	<ul style="list-style-type: none"> Maintain transparency in project activities Create trust among the local people Timely implementation of the project

The project proponent delivered their best efforts to address the queries and concerns of the participants of the program. The proponent also assured the best and effective ways or methods will be adopted in order to minimize the negative impacts as well as maximize the beneficial/positive impacts of the project. The suggestion of the people particularly in the compensation, support for infrastructure development, safety and environmental measures are incorporated in chapter 6. Environmental enhancement programs are based on feedback and input provided by the local people. At the end of the program, the chairman presented his closing remarks.

9.4 Conclusion

Local people were positive towards the implementation of the project provided that the affected people and the local communities are benefited from the project. The proponent is also concerned about genuine issues of the public regarding the project. The local media highlighted about the public hearing program including public response and outcomes of the hearing.



10 REVIEW OF POLICY AND LEGAL PROVISION

Nepal has developed legislative requirements for assessing the environmental impacts of development projects. The Ministry of Population and Environment (MoPE) is responsible in prescribing legal measures to study and require mitigation of all potential sources of air, land and water degradation adversely impacting on the natural and social environments. This includes framing environmental rules, standards and guidelines and decide on future environmental permit requirements as appropriate. MoPE is responsible for the administration of the National EIA process.

The then prevailing Plans/ Policies, Acts, Rules/ Regulations Guidelines, Standards, Conventions Strategies, etc. which were required for the development of hydroelectric projects in Nepal were reviewed while preparing the approved EIA report of THP. *In addition to legal provisions reviewed during the EIA, Constitution of Nepal 2072 and शासकीय तथा आर्थिक सुधारको तत्कालीन कार्ययोजना, २०६९ are also reviewed for preparing this S-EIA report.* The proponent will abide by any other laws besides those already mentioned in the document, attracted due to various activities, that will be undertaken during project implementation.

10.1 The Constitution of Nepal

The Article 30 states about the Right regarding clean environment which includes three parts. According to this article part 1, each person shall have the right to live in a healthy and clean environment. According to this article part 2, the victim of environmental pollution and degradation shall have the right to be compensated by the pollutant as provided for by law. According to this article part 3, provided that this Article shall not be deemed to obstruct the making of required legal provisions to strike a balance between environment and development for the use of national development works. The proposed project is a component of hydropower development project and it attracts the provisions made in Constitution of Nepal. Hence, it is mandatory to follow the Constitution of Nepal, 2072 (2015); in regards with environment conservation while implementing the project. The Article 51 states about policy regarding the conservation, management and use of natural resources as follows:

- The State shall pursue a policy of making a sustainable use of biodiversity through the conservation and management of forests, fauna and flora, and by minimizing the negative impacts of industrialization and physical development by promoting public awareness on environmental cleanliness and protection.
- The State shall pursue a policy of keeping an environmental balance.
- The State shall pursue a policy of adopting appropriate ways of minimizing or stopping negative impacts on environment if it is there, or if there is a possibility of such an impact nature, environment, or biodiversity.
- The State shall formulate policies and enact laws on the basis of the principle of sustainable environment development based on pre-warning and pre-informed agreements regarding environmental protection. Those people who pollute the environment shall have to be responsible for their action.

10.2 Plan, Policy and Strategy

10.2.1 Nepal Environmental Policy and Action Plan, 2050 (1993) and 2055 (1998)

Nepal Environmental Policy and Action Plan (NEPAP) is a Government Policy document of environment management with focus on incorporating environmental concerns into the biological and social components of the environment.

10.2.2 Forestry Sector Policy, 2071 (2015)

The long term vision of Forest Policy, 2071 (2015) is to contribute towards local and national welfare through sustainable management of forest, biological diversity and watershed. The main goal of the policy is to conserve, promote and utilize forest, flora, fauna, conservation area, biological diversity and watershed and generate job employment, increase income, improve livelihood of vulnerable people and balance the ecosystem. The objectives of the policy is to conserve and manage forest, flora, fauna, conservation area and watershed to bring environmental balance, increase the forest productivity and production of forest products for fulfilling local and national needs and enhance exports to contribute towards national economy, develop and promote community forest and other community based forest management options, involve private sector in forest area conservation, promotion and management for income generation and generate job employment and enhance the forest governance. To achieve above vision, goals and objectives, policies for increasing productivity and forest products through sustainable forest management, increasing benefits from biological diversity, resource conservation and environmental services and fair distribution of these resources, increasing productivity of water and land conservation through united conservation and management of watershed, enhancing community forests, leasehold forests, religious forests, protected forests and buffer zone community forest for ecological, economic and social benefits and fair distribution, involving private sector in forest area conservation, promotion and management for income generation, applying climate change mitigation and adaptation measures and strengthen management for forest sector governance, inclusion and social law promotion. MoFSC is responsible for monitoring the implementation of its policy.

10.2.3 Hydropower Development Policy, 2058 (2001)

The Hydropower Development Policy was promulgated in 2001. The main objectives of the policy include producing clean energy through the development of hydroelectric projects and to help conserve the environment. It is stipulated that one of the policies is to extend the use of electricity for achieving a reduction in the utilization of fuelwood and to render necessary assistance in the conservation of forests and the environment. Some of the major policies are as follows:

- To carry out hydropower projects of various standards and capacities to meet the interim and long term electricity requirements.
- To give emphasis to programs in rural electrification in order to render assistance in the development of agriculture production and cottage and small scale industries in the hills and the Terai region.
- To utilize indigenous labour, skills and resources as well as foreign investments and technology for the development of hydropower.
- To extend the use of electricity so as to minimize utilization of fuelwood and to render necessary assistance in the conservation of forests and the environment.
- To make the supply and distribution of electricity regular and reliable.

- To have maximum control in the leakage of electricity.
- To stimulate the consumers Demand Side Management for energy promotion.

10.2.4 Nepal Biodiversity Strategy and Action Plan, 2071 (2014-20)

The GoN Nepal prepared and implemented Nepal Biodiversity Strategy in 2002 and Nepal Biodiversity Strategy Implementation Plan in 2006. Useful experience and lessons have been learnt from the implementation of the strategy and the plan. Moreover, substantial changes have taken place in the socio-political and environmental contexts of the country over the last decade. Several new themes and issues have emerged or gained prominence since 2002. In light of these changes, the Ministry of Forests and Soil Conservation (MoFSC) has prepared this revised National Biodiversity Strategy and Action Plan (NBSAP) in 2071 BS. It has been prepared to meet the national needs for managing biodiversity on a sustainable basis for the benefit of present and future generations, and also to fulfill the country's international obligations. The objective of developing the NBSAP is to provide a strategic planning framework for conservation and sustainable use of biodiversity and biological resources of Nepal for enhancing local livelihoods and eco-friendly national development, and equitable sharing of the benefits accrued from utilization of biological resources among all sections of the society. It has a long-term (i.e. 35 years) vision, and includes specific short-term (up to 2020) strategies and priorities for action.

10.2.5 Climate Change Policy 2067 (2011)

The Climate Change Policy was approved by the Government of Nepal on January 2011. Main of the objectives of the policy include the promotion of the use of clean energy such as hydroelectricity, renewable and alternative energies and thereby increasing energy efficiency and encouraging use of green technology. Some of the major objectives of the policy are as follows:

To establish a Climate Change Center as an effective technical institution to address issues of climate change and also strengthen existing institutions;

- To implement climate adaptation-related programmes and maximize the benefits by enhancing positive impacts and mitigating the adverse impacts;
- To reduce GHG emissions by promoting the use of clean energy, such as hydro-electricity, renewable and alternative energies, and by increasing energy efficiency and encouraging the use of green technology;
- To enhance the climate adaptation and resilience capacity of local communities for optimum utilization of natural resources and their efficient management;
- To adopt a low-carbon development path by pursuing climate-resilient socio-economic development;
- To develop capacity for identifying and quantifying present and future impacts of climate change, adapting to climate risks and adverse impacts of climate change; and
- To improve the living standard of people by maximum utilization of the opportunities created from the climate change-related conventions, protocols and agreements.

10.3 Acts

10.3.1 Water Resources Act, 2049 (1992)

The objectives of the Water Resources Act, 1992 is to make legal arrangements for determining beneficial uses of water resources, preventing environmental and other hazardous effects thereof and also for keeping water resources free from pollution. The Act



10.3.2 Electricity Act, 2049 (1992)

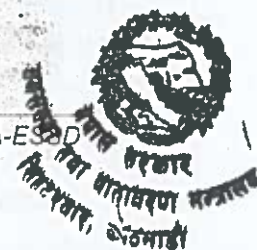
10.3.3 Environment Protection Act, 2053 (1997)

10.3.4 Land Reform Act, 2021 (1964)

10.3.5 Land Acquisition Act, 2034 (1977)

10.3.6 Forest Act, 2049 (1993)

The Forest Act, 2049 (Amendment 2055) recognises the importance of forests in maintaining a healthy environment. One of the major objectives of the enhancement and enforcement of the Forest Act is the promotion of a healthy environment. The Act requires decision-makers to take into account of all forest values, including environmental services and bio-diversity. It emphasises the development and implementation of an approved work plan for different categories of forests, i.e. community forests, leasehold forests, private forests and religious forests.



10.3.7 Soil and Watershed Conservation Act, 2039 (1982)

In order to manage the watersheds of Nepal, the Soil and Watershed Conservation Act, 1982 was enacted. The act is devoted only to the protection of watersheds. Under Section 10 of SWCA, power is extended to the Watershed Conservation Officer to grant permission to construct dams, drainage ditches and canals, cut privately owned trees, excavate sand, boulders and soil, discharge solid waste and establish industry or residential areas within any protected watersheds. The Act outlines the essential parameters necessary for proper watershed management.

10.3.8 Aquatic Animals Protection Act, 2017 (1961)

The provision of the Aquatic Life Protection Act, 1961 (amendment 1999) obliges the proponent to construct a fish ladder at the dam site to ensure the movement of aquatic animals. If it is not possible, the proponent should establish a fish hatchery or a nursery, close to the dam site of the water resources projects, for artificial reproduction and ex-situ conservation (Section 5 b).

10.3.9 Explosives Act, 2018

Implementation of Tanahu HEP will require explosives in the excavation works of road, tunnels, an underground powerhouse, aggregate quarry etc. As per the provisions of the Explosives Act, Article 4, the project needs a license for the procurement, storage, use and transportation of explosives for its purpose.

10.3.10 Labour Act, 2049 (1993)

This act classified below 15 years as a child and 'nabalik' for the age group of above 14 years and below 18 years. The act has also made provision of labour court and department of labour. The act clearly mentions that the appointment letter should be issued for all the employees which include their working hours, working time, wages and other benefits. The act allows for a time bound contract for the human resources required for development work. The act specifies that working hours for the Nabalik and women must be within 6 AM to 6 PM which clearly restricts to deploy women in night works. The act also states that equal opportunity shall be given to women as men. Similarly working period for the other employees must not exceed 8 hours a day and 48 hours in a week. If some people work beyond that period, over-time allowances must be paid which is 150% of the normal per hour wages and such over-time must not exceed 4 hours in a day. According to this act wages rate of the employees shall not be less than the rate fixed by the concerned offices of GoN.

10.3.11 Solid Waste Management Act, 2068 (2011)

Section 5 of the Act directs any individual, organization or body to reduce the production of solid waste while carrying out some transaction or activity. Section 7 (3) of the Act prohibits the discharge of harmful waste or chemical waste shall at solid waste collection centre or transfer centre. The act further clarifies that the responsibility for the processing and management of harmful waste, health institution related waste, chemical waste or industrial waste will be of the individual or body producing such solid waste.

10.3.12 Local Self-Governance Act, 2055 (1998)

The Local Self-Governance Act, 2055 contains several provisions for the conservation of soil, forest and other natural resources and implementation of environmental conservation

activities. Section 28 and 19 of the Act provide that the Village and the District Development Committees are responsible for the formulation and implementation of the programs related to the protection of the environmental bio-diversity. Section 96 stipulates that it is the duty of the municipality to protect the environment through the control of air, water and sound pollution. It also obligates the Municipality to maintain environmental cleanliness through the implementation of solid waste management, flood and landslide control programs. This Act is relevant as the proposed project will utilize natural resources and carry out development activities in the project affected VDCs. Hence, it is mandatory to the project for proposing mitigation measures.

10.4 Rules / Regulations

10.4.1 Environment Protection Rule, 2054 (1997)

The EPR was endorsed in June 1997 and was made under the provisions of the Environment Protection Act. The EPR was amended in April 1999. The EPR adopts the environmental assessment criteria mentioned in the EIA guidelines. However, the EPR establishes administrative framework for assessing, exhibition and determination of EIA, in terms of issues needing to be addressed and the format/layout of the EIA document.

The recent Amendment (dated 2073/10/17) of the EPR, 2054, makes supplementary EIA mandatory for such project which design or physical infrastructure or capacity is changed after the approval of the EIA and which pose serious environmental impacts. Similarly, for those projects whose forest area requirement is more than 10% of what is prescribed in approved in EIA, a S-EIA is required. In such case, the proponent is required to follow all the procedures (except those for Scoping and ToR approval) for S-EIA as spelled out in EPR, 2054 [Rule 5 sub-rule 2(a)].

10.4.2 Water Resources Regulation, 2050 (1993)

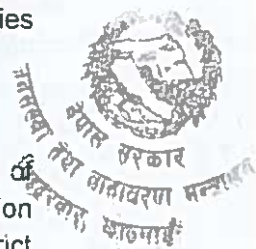
It is mandatory under Rule 17(e) of the regulation that any person or corporate body, who desires to obtain a license for utilization of water resources must state in his application that appropriate measures will be taken to lessen the adverse effects due to the project on the overall environment. Rule 19 stipulates that the water resources committee shall publish a notice giving detailed information about the project to the people.

10.4.3 Electricity Regulation, 2050 (1993)

Rules have been formulated for the implementation of the provisions made in the Electricity Act, 1992. Rule 12 (f) and Rule(g) are related to the EIA process which emphasize that the EIA report should include measures to be taken to minimize the adverse effects of the project on social, biological and physical environments and should also elaborate utilization of local labour, source of materials, benefits to the local people after the completion of the project, training to local people in relation to construction, maintenance and operation, facilities required for construction site and safety arrangements.

10.4.4 Local Self -Governance Rules, 2056 (1999)

The Local Self-Governance Rule, 2056 contains several provisions for the conservation of soil, forests and other natural resources and implementation of environment conservation activities. The Section 28 and 19 of the Act provide that the Village and the District Development Committees are responsible for the formulation and implementation of the



programs related to the protection of environmental bio-diversity. Section 96 stipulates that it is the duty of the municipality/ VDCs to protect the environment through the control of air, water and sound pollution. It also obligates the Municipality/VDCs to maintain environmental cleanliness through the implementation of solid waste management, flood and landslide control programmes.

10.5 Guidelines

10.5.1 National EIA Guidelines, 1993

The National EIA Guidelines, 1993 developed by the National Planning Commission in conjunction with IUCN, set out the process for the environmental review and management of infrastructure projects in all sectors and the respective roles of certain GON agencies and project proponents. These guidelines were part of a comprehensive program to develop the national and sectoral guidelines for establishing a national system for environmental impact assessment which was a part of GoN National Conservation Strategy and Nepal's Seventh Year Plan. The guidelines were endorsed by GoN on 27 September 1992 and gazetted on 19 July 1993. The schedules attached to the Guidelines include:

- Schedule 1 : Projects requiring an IEE Report
- Schedule 2 : Projects requiring an EIA
- Schedule 3 : EIA based on project sites
- Schedule 4 : Projects requiring an IEE Report
- Schedule 5 : Format for Terms of Reference
- Schedule 6 : Environmental Impact Report Format

10.5.2 Forest Produce Collection and Sales Distribution Guidelines, 2057 (1998)

The guidelines Clauses 3 to 10 have specified various procedures and formats for getting approval for vegetation clearance, delineation of lands for vegetation clearance, evaluation of wood volume, etc. and government offices and officials responsible for the approval, delineation and evaluation. These provisions have a direct relevance to the development of the project and need compliance to these provisions.

10.5.3 Forest Land Leasing for Other Purposes Procedure, 2063

GoN has recently developed the Forest Land leasing for Other Purposes Procedure, 2063. Development project can obtain the forest land as a lease for certain period of time from Department of Forest and acquire it for the use of project during operation phase.

10.5.4 राष्ट्रिय प्राथमिकता प्राप्त योजनाको लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्ने सम्बन्धि कार्यविधि २०७४

राष्ट्रिय प्राथमिकता प्राप्त योजना संचालन गर्न स्वीकृती दिने विषयलाई व्यवस्थित गर्न राष्ट्रिय प्राथमिकता प्राप्त योजनाका लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्ने सम्बन्धि कार्यविधि, २०७४ लागु गरेको छ । यस कार्यविधिमा मुलतः योजनासँग सम्बन्धित मन्त्रालयले योजनाको सम्भाव्यता अध्ययन गर्दा सम्भव भएसम्म राष्ट्रिय वन क्षेत्र नपर्ने गरी सम्भाव्यता र विकल्पहरुको अध्ययन गर्नु पर्ने र अध्ययन गर्दा राष्ट्रिय वन क्षेत्र नै प्रयोग गर्नु पर्ने भएमा अति आवश्यक पर्ने न्यूनतम वन क्षेत्र मात्र प्रयोग गर्ने वा न्यूनतम रुख बिरुवा हटाउनु पर्ने विकल्पको छनौट गर्नु पर्ने छ । साथै योजनाको लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्नु पर्ने देखिएमा योजनासँग सम्बन्धित मन्त्रालयले त्यस्ता योजना कार्यान्वयन गर्दा वातावरणमा पर्ने प्रभावका सम्बन्धमा प्रचलित वातावरण संरक्षण ऐन तथा नियमावली बमोजिम प्रारम्भिक परीक्षण वा वातावरणीय मूल्याङ्कन प्रतिवेदन तयार गर्नु पर्नेछ ।



सर्वेक्षणबाट योजना कार्यान्वयन गर्दा वातावरणमा प्रभाव पर्ने देखिएमा सम्बन्धित मन्त्रालयले क्षति न्यूनीकरणका आवश्यक उपायहरू (मिटिगेशन मिजर्स) समेत समावेश भएको वातावरणीय व्यवस्थापन योजना सहितको प्रतिवेदन तयार गर्नुपर्ने र प्रतिवेदन स्वीकृत गर्नु अघि सम्बन्धित मन्त्रालयले सो विषयमा वन मन्त्रालयको सहमति लिनु पर्ने प्रावधान रहेको छ। राष्ट्रिय वन क्षेत्र प्रयोग गर्न स्वीकृति माग गर्ने, जिल्ला वन कार्यालयमा पठाउने, नेपाल सरकारले स्वीकृति दिने, सट्टाभर्ना स्वरूप जग्गा उपलब्ध गराउनु पर्ने, वन क्षेत्र प्रयोग गरे वापत रकम बुझाउनु सक्ने, वन पैदावार व्यवस्थापन तथा वृक्षारोपण गर्नु पर्ने व्यवस्था रहेको छ।

योजना कार्यान्वयन गर्न राष्ट्रिय वन क्षेत्र प्रयोग गरी रुख विरुवा कटान गरी हटाउनु योजनाले उक्त रुख विरुवाहरू आफ्नै लागत खर्चमा कटान मुद्दान र घाटगद्दी गरी सम्बन्धित कार्यालयलाई हस्तान्तरण गर्नु पर्नेछ। वन मन्त्रालयको कटान मापदण्ड (नर्म्स) बमोजिम योजनाले वृक्षारोपण गर्नु पर्ने। रुखाविरुवा कटान हुने भएमा त्यस्तो रुखविरुवाको पच्चीर गुणाको दरले सम्बन्धित वन कार्यालयले तोकेको जग्गामा योजनाले वृक्षारोपण गर्नु पर्नेछ। वृक्षारोपण गरेको रुखविरुवाको पाँच वर्षसम्म सम्बन्धित योजनाले वन कार्यालयको समन्वयमा स्याहार, सम्भार र रेखदेख गर्नु पर्नेछ, र पाँच वर्षपछि त्यस्ता रुख विरुवा सम्बन्धित कार्यालयलाई हस्तान्तरण गर्नु पर्ने व्यवस्था छ।

अस्थायी रूपमा राष्ट्रिय वन क्षेत्र प्रयोग गर्ने योजनाले कबुलियती वनको लागि तोकिएको दस्तुर रकम सङ्घीय सञ्चित कोषमा जम्मा हुने गरी हरेक वर्ष बुझाउनु पर्नेछ। क्षति न्यूनीकरणका उपाय अपनाउनु पर्ने योजना कार्यान्वयन गर्दा नगरेको विषयमा जनसङ्ख्या तथा वातावरण मन्त्रालयले वन मन्त्रालयसँग समन्वय गरी अनुगमन गर्न र सुधारको लागि आवश्यक सभात्र दिन सक्ने छ। योजनाको लागि राष्ट्रिय वन क्षेत्र प्रयोग गर्ने गरी नेपाल सरकारले स्वीकृति दिएपछि सम्बन्धित योजनाले राष्ट्रिय वन क्षेत्र प्रयोग गर्दा पालना गर्ने शर्तहरू समेत उल्लेख गरी वन विभागले त्यस्तो योजनासँग सम्झौता गर्नु पर्ने प्रावधान रहेको छ।

10.5.5 Community Forest Resource Survey Guidelines (2061)

The Community Forest Resource Guidelines (2061) gives the detail about of the Community Forest. It gives the composition, species, habitat, growth and economic value of plants in the community forest which are useful while giving compensation as well as for implementing enhancement programs especially to Forest User's Group.

10.6 International Conventions and Agreements

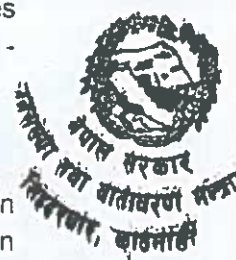
Nepal is signatory to a number of broader international conventions such as concerning habitats, biodiversity and cultural heritage protection which also must be taken into account during the EIA of projects which directly or indirectly affect the protected zones, or other properties covered by such agreements. For example, Nepal is currently a signatory to:

10.6.1 CITES

Nepal is a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) agreement (1975) which classifies species according to criteria where access or control is important (e.g., I - species threatened with extinction; II - species which could become endangered; III - species that are protected (CITES 1973); E - Endangered; V - Vulnerable, R - Rare).

10.6.2 ILO Convention on Indigenous and Tribal Peoples, 1989 (No.169)

Nepal ratified ILO Convention No. 169 on September 14, 2007. In 2007 the UN Declaration on the Rights of Indigenous Peoples was adopted by the General Assembly. The declaration reaffirms the importance of the principles and approaches provided for under Convention No. 169 and its adoption therefore provide a fresh impetus for promoting the ratification and implementation of Convention No. 169. ILO Convention No.169 highlights the need to



recognize indigenous and tribal people's specific knowledge, skills and technologies as the basis for their traditional economies and self-determined development process. Article -1 of the convention provide definition of the tribal and indigenous people. Article -6 deals the consultation of the peoples concerned through appropriate procedure and in particular through their representative institutions, whenever consideration is being given to legislative or administrative measures which may affect them directly.

In Article 15 the rights of the peoples concerned to the natural resources pertaining to their lands shall be specifically safeguarded. These rights include the right of these people to participate in the use, management and conservation of these resources. The use of the term land includes the concept of territories, which covers the total environment of the areas which the people occupy or otherwise use. The peoples concerned shall wherever possible participate in the benefits of such activities and shall receive fair compensation for any damages which they may sustain as a result of such activities. Article 16 (2) clearly mention that where the relocation of these peoples is considered necessary as an exceptional measures such relocation shall take place only with their free and inform consent. Where their consent cannot be obtained, such relocation shall take place only following appropriate procedures established by national laws and regulations, including public inquiries where appropriate, which provide the opportunity for effective representation of the peoples concerned. Article 16 (3) mention that whenever possible these peoples shall have right to return their traditional land as soon as the grounds for relocation cease to exist. Article 16(5) elaborated persons thus relocated shall be fully compensated for any resulting loss or injury.

10.6.3 Convention on Biological Diversity, 1992

The convention contains a series of far reaching obligations related to the conservation of biological diversity and sustainable uses of its components. One of these obligations is the requirement for environmental study. The purpose of an environmental study in relation to biodiversity conservation is to identify in advance:

- The aspects of the project which is likely to have significant adverse effects on biological diversity at genetic, species and ecosystem level, and
- The steps to be taken to avoid or minimize significant adverse effects to ensure that the proposed project comply with existing environmental legislation
- The GoN has included 17 species of plants and 39 species of wild animals in the protection list.
- If the project area is in the core habitat of these species and project activity will likely to affect them, mitigation measures shall be proposed and be implemented to avoid and/ or mitigate the adverse impacts. Nepal is a party to the convention of Biological diversity and in accordance to the article 14, adequate attention should be given to minimize and or avoid the impacts.

11 CONCLUSION

The finding of S- EIA shows that the adverse impacts on Physical, Biological, Socio- economic and Cultural environment due to the implementation of the proposed project are moderate type. Wherever possible, efforts have been made by the project planning team to limit adverse impacts on the environment by selecting environmentally benign design options and otherwise suggesting appropriate mitigation measures.

The environmental impact mitigation measures will be incorporated in Contract Documents providing the Environment and Social Mitigation/Enhancement requirements for the Contractors/ Project Company to consider in his bid and follow during construction.





Appendix A

Generation License and Concerned Letters







नेपाल सरकार
ऊर्जा मन्त्रालय

विद्युत विकास विभाग

अनुमतिपत्र महाशाखा

२०६२/६३
पत्र संख्या :- ६६२

प्रमाणित २०६३/०२/२४

पत्र संख्या :- ६६२

आयोजना अध्ययन महाशाखा

काठमाडौं, नेपाल

मिति

२०७३/०२/२४

विषय:- तनहुँ जलविद्युत आयोजना (१२७,००० कि.वा.) को विद्युत
उत्पादनको अनुमतिपत्र बारे ।

✓ श्री तनहुँ हाइड्रोपावर लि.
ट्रेड टावर, चौथो तल्ला, थापाथली, काठमाडौं
फोन नं:- ५१११११७, ५११११२१
Email: info@thl.com.np

प्रस्तुत विषयमा न्यस लि.ले तनहुँ जलविद्युत आयोजना (१२७,००० कि.वा.) को विद्युत
उत्पादनको अनुमतिपत्र पाउन मिति २०७२/०९/०६ मा दिएको दरखास्त अनुसार विद्युत ऐन,
२०४९ को दफा ४ को उपदफा २ र विद्युत नियमावली, २०५० को नियम १७ बमोजिम
नेपाल सरकार, ऊर्जा मन्त्रालय सचिवालय को मिति २०७३/०२/०३ को निर्णयानुसार मिति
२१०८/०२/०२ सम्म बहाल रहने गरी जारी भएको १२७,००० किलोवाट क्षमताको विद्युत
उत्पादनको अनुमतिपत्र संख्या वि.वि.वि. ०७२/७३ वि.उ. १५७ यसै साथ सलग्न गरी पठाइएको
व्यहोरा अनुरोध छ ।

संलग्न: विद्युत उत्पादनको अनुमतिपत्र संख्या वि.वि.वि. ०७२/७३ वि.उ. १५७ ।

Vijaya

विजय शर्मा ।

अनुमतिपत्र

बोधार्थ:

श्री ऊर्जा मन्त्रालय, सिंहदरवार

श्री विद्युत विकास विभाग

➢ आयोजना अध्ययन महाशाखा

➢ निरीक्षण महाशाखा

➢ आर्थिक प्रशासन शाखा : मिति २०६७/०२/१२ मा आ.र.न. २१९९ ने.रा वै.ध.भौ.न. ६१८०२१
वाट अनुमतिपत्र दस्तुर वापत रु १०,००,०००/०० (अक्षरूपी रु दश लाख) तथा मिति
२०७०/०२/२८ मा आ.र.न. ३८९३ ने.रा वै.ध.भौ.न. १८३६९३९ वाट अनुमतिपत्र दस्तुर वापत रु.
३०,००,००० (अक्षरूपी रु तिस लाख मात्र) राजश्व खातामा जम्मा हुन ।

श्री जिल्ला जलश्रोत र्सर्भानि, बझाङ ।





विद्युत उत्पादनको अनुमतिपत्र

(तनहुँ जलविद्युत आयोजना: १२७,००० कि.वा.)

अनुमतिपत्र संख्या: वि.वि.वि. ०७२/७३ वि.उ-१५७

श्री तनहुँ हाइड्रोपावर लि.

ट्रेड टावर, चौथो तल्ला, थापाथली, काठमाण्डौ

फोन नं: ५१११११७, पयाक्स नं: ५११११२१

Email: info@thl.com.np

महाशय,

विद्युत उत्पादनको लागि अनुमतिपत्र पाउन मिति २०७२ ०९ ०६ मा दिनुभएको दरखास्त अनुसार देहायका विवरणहरू खोली विद्युत ऐन, २०४९ को दफा १४) को उपदफा १२) र विद्युत नियमावली, २०५० को नियम १७ बमोजिम देहायका शर्तहरू सहित यो अनुमतिपत्र प्रदान गरिएको छ ।

१. अनुमतिपत्र पाउने व्यक्ति वा संगठित संस्थाको पूरा नाम र ठेगाना :

श्री तनहुँ हाइड्रोपावर लि.

ट्रेड टावर, चौथो तल्ला, थापाथली, काठमाण्डौ

फोन नं: ५१११११७, पयाक्स नं: ५११११२१

Email: info@thl.com.np

२. विद्युत परियोजनाको नाम : तनहुँ जलविद्युत आयोजना (Reservoir Type)
जडित क्षमता : १२७,००० किलोवाट (१२७ मेगावाट)
सरदर वार्षिक उत्पादन : ६०७ गिगावाट घण्टा विद्युतशक्ति

३. विद्युत शक्ति उत्पादन गर्ने साधन : जलस्रोत ।

४. जलस्रोत उपयोग गरिने भए :

(क) नदीको नाम : सेती नदी

(ख) जलस्रोत उपयोग गर्न पाइने क्षेत्र

(अ) अञ्चल

(आ) जिल्ला

(इ) गा वि स नगरपालिका

गण्डकी

तनहुँ

भिमाद, छात्र माझकोट, काँटदरवार, रिसि रानीपोखरी, सावु, भगवतीपुर, जामुने, काहुँ शिवपुर गा वि स हरू र व्यास नगरपालिका

पूर्व

पश्चिम

उत्तर

दक्षिण

८४°१७'३०" E पूर्वी देशान्तर

८४°०४'००" E पूर्वी देशान्तर


२८°००'००" N उत्तरी अक्षांश

२७°५५'००" N उत्तरी अक्षांश

(ग) जलस्रोतको परिमाण डिजाइन डिस्चार्ज (Design Discharge) १२७.४ घनमिटर प्रति सेकेण्ड र ग्रेट हेड ११५ मिटर





५. मुख्य मुख्य संरचनाहरूको विवरण  तनहुँ जलाविद्युत आयोजनाको मुख्य अभियन्ताको तनहुँ जिल्लाको काहुँ शिवपुर गा.वि.स- १ तथा व्यास नगरपालिकामा पर्दछन् । २०६६

क) हेडवर्क्स (Headworks):

यस आयोजनाको बाँध तनहुँ जिल्लाको काहुँ शिवपुर गा.वि.स.मा हुनेछ । यो आयोजनाको सेती नदीमा १७० मिटर लामो १४० मिटर अग्लो कंक्रीट बाँध बनाईने छ । ७.२६ वर्ग कि.मि. क्षेत्रफलमा रहने गरी १८ कि.मि. लामो जलाशय हुनेछ र सो जलाशयमा २९५.१ मिलियन घनमिटर भण्डारण क्षमता रहनेछ । सेती नदीमा निर्माण गरिने बाँधमा ६ वटा रिडियल ढोका रहनेछन् साथै Dam Crest Level समुद्री सतहबाट ४२० मिटर रहनेछ ।

ख) गभल ट्राप (Gravel Trap), बालुवा थिग्याउने ट्याङ्की (Settling Basin) तथा रेगुलेटिङ पोण्ड (Regulating Pond)

बालुवा थिग्यान सफा गर्नका लागि १.१५ स्लपमा ५ मिटर x ५ मिटरको ढाँचा गेट भएको पाईप रहने छ । Flood Discharge ७३७७ घन मिटर सेकेण्ड क्षमता भएको Chute Types को Spillway र Ski Jump Type को शक्ति सन्तुलक रहने छन् ।

ग) हेडरेस टनेल (Headrace Tunnel) तथा Surge Tank

बाँधबाट Tower type को एउटा प्रवेशद्वार (Intake) मार्फत भित्री व्यास ७.८ मिटर र कुल लम्बाई ९२७ मिटरको सुरुङ मार्फत Orifice को व्यास ३.७ मिटर Chamber को व्यास १७ मिटर भएको हेडरेस टनेल (Headrace Tunnel) हुँदै पानी पठाईने छ ।

घ) पेनस्टक पाइप (Penstock Pipe):

भित्री व्यास ७.८ देखि ३.१ मिटर सम्मको कुल लम्बाई १०५ मिटर लामो Penstock हुँदै Underground विद्युतगृह (Powerhouse) सम्म पुर्‍याईनेछ ।

ङ) विद्युत गृह (Power House):

तनहुँ जलविद्युत आयोजनाको भूमिगत विद्युतगृह २२ मि चौडाई x ४२ मि. उचाई x ९० मि लम्बाईको हुनेछ । विद्युत गृहमा रहेको २ वटा Vertical Axis Francis Turbines (Each of 64.1 MW rated output) २ वटा जेनरेटरहरूको सहायताले कुल १२७,००० कि.वा. विद्युत उत्पादन गरिनेछ ।

च) टेलरेस (Tailrace):

विद्युत गृहबाट निस्केको पानीलाई भित्री व्यास ८.२ मिटर र लम्बाई ३२० मिटर भएको लामो टेलरेस (Tailrace) द्वारा पुनः सेती नदीमा छाडिने छ । साथै Tail Water Level समुद्री सतहबाट २८०.२ मिटर रहनेछ ।

छ) प्रसारण लाईन (Transmission Line):

यस आयोजनाबाट उत्पादित विद्युतलाई करिब ४० कि.मि. लामो २२० के.भि. डबल सर्किट विद्युत प्रसारण लाईन मार्फत नेपाल विद्युत प्राधिकरणको भरतपुर सबस्टेशनमा जोडिने प्रस्ताव गरिएको छ ।

६. अनुमतिपत्र बहाल रहने अवधि :

मिति: २०७३ ०२ ०३ देखि २१०८ ०२ ०२ सम्म ।



७. अन्य शर्तहरू :



(क) निम्न कागजातहरू तथा सोमा हुने सशोधनसमेत यस अनुमतिपत्रको अभिन्न अङ्गको रूपमा रहनेछन्

(अ)

- 1) Upgraded Feasibility Study of Tanahu Hydropower Project
Final Report , August 2013
- 2) Upgrading Feasibility Study on Tanahu (Upper Seti)Hydropower Project
Final Report (Summary) 2007
- 3) Upgrading Feasibility Study on Tanahu (Upper Seti)Hydropower Project
2007 Environmental and social Consideration . 2007
- 4) Tanahu (Upper Seti) Hydropower Project Environmental Impact Assesment Report
Final Volume - I,August 2009

(आ) नेपाल सरकार, वातावरण मन्त्रालय (सचिबस्तर) को मिति २०६६।०७।५ को निर्णयानुसार स्वीकृत तनहुँ जलविद्युत आयोजनाको वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदनमा उल्लेख भएको शर्तहरू कार्यान्वयन गर्ने गरी ।

(इ) त्यस संस्था र नेपाल विद्युत प्राधिकरण बीच हुने विद्युत खरिद विक्री सम्झौता ।

(ख) आयोजनाको विस्तृत इन्जिनियरिङ डिजाइन तथा सोको लागि आवश्यक पर्ने फिल्ड अन्वेषणको कार्य, सुरक्षात्मक व्यवस्था सम्बन्धी जिम्मेवारी तथा वातावरणीय प्रभाव न्यूनीकरण सम्बन्धी सम्पूर्ण उत्तरदायित्वहरू त्यस संस्थामा रहनेछ ।

(ग) आयोजनाको विद्युत उत्पादन क्षमतामा असर नपर्ने गरी माथि (क) (अ) मा उल्लिखित प्रतिवेदन तथा प्रकरण (५) मा उल्लिखित मुख्य सरचनाहरूको डिजाइनमा बृहत वा उल्लेखनीय परिवर्तन गर्नुपरेमा वा सरचना नै थपघट गर्नुपरेमा सो को पूर्व स्वीकृती लिनुपर्नेछ । तर परियोजनाको निर्माणस्थलमा वातावरणीय वा अन्य प्रतिकूल असर नपर्ने गरी परियोजनाको स्थान तथा डिजाइनमा सामान्य हेरफेर वा परिवर्तन गर्नुपरेमा तत्सम्बन्धी जानकारी ऊर्जा मन्त्रालय, विद्युत विकास विभागलाई दिई गर्न सकिनेछ ।

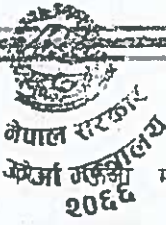
(घ) त्यस संस्थालाई प्रदान भएको यस अनुमतिपत्रको प्रकरण ४ मा उल्लेख भएको क्षेत्रभन्दा बाहिर नजाने गरी आयोजनाको सरचनाहरू जलाशयबाट सिर्जना हुने Back Water, Tail Water लगायत निर्माण गर्नुपर्नेछ ।

(ङ) अनुमतिपत्र जारी भएको १ वर्ष भित्र विद्युत नियमावली, २०५० को नियम २१ बमोजिम भौतिक रूपमा निर्माण कार्य शुरू गर्नुपर्नेछ र निर्माण कार्य सम्पन्न नभएसम्म प्रत्येक ६ महिनामा कार्य प्रगति विवरण विद्युत विकास विभागलाई दिनुपर्नेछ । दुई वर्षभित्र वित्तीय व्यवस्था (Financial Closure) र विद्युत खरिद सम्झौता (PPA) नभएमा अनुमतिपत्र रद्द गरिनेछ । उक्त अवधि भित्र वित्तीय व्यवस्था सम्पन्न हुन नसकेमा आवश्यकता एवं औचित्यका आधारमा बढिमा एक वर्षमात्र म्याद थप गर्न सकिनेछ । उक्त अवधिमा पनि वित्तीय व्यवस्था सम्पन्न हुन नसकेमा अनुमतिपत्र स्वतः रद्द हुनेछ ।

(च) आयोजना निर्माण तथा सञ्चालन सम्भार अवधिभर वातावरणमा उल्लेखनीय प्रतिकूल असर नपार्नका लागि वातावरण संरक्षण ऐन, २०५३ तथा वातावरण संरक्षण नियमावली, २०५४ र वातावरणसम्बन्धी अन्य प्रचलित कानूनहरू पालना गर्नुपर्नेछ ।

(छ) नेपाल सरकार वातावरण मन्त्रालयको मिति २०६६।०७।५ को निर्णयानुसार स्वीकृत तनहुँ जलविद्युत आयोजनाको वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदनमा उल्लिखित वातावरणीय प्रभाव न्यूनीकरण (Mitigation), व्यवस्थापन तथा अनुगमन योजनामा उल्लिखित प्रावधानहरू तथा मन्त्रालयबाट थप दिएका सुदाहर, समेतका अधीनमा रही न्यूनीकरण तथा अनुगमनका कार्यहरू अनिवार्य रूपले कार्यान्वयन गर्नु/गराउनु पर्नेछ । आयोजना निर्माण तथा संचालन सम्भारको अवधिमा अन्य थप दिएका कार्यहरू अपनाउनुपर्ने देखिएमा सो समेत गर्नु/गराउनु पर्नेछ । न्यूनीकरण तथा





अनुगमन योजनामा सशोधन गर्नु मन्त्रालय तथा त्यस संस्थाको आपसी सहमतिमा गर्ने सकिनेछ ।

- (ज) यस अनुमतिपत्रको अवधिभर स्वीकृत वातावरणीय प्रभाव मूल्यांकन प्रतिवेदनमा उल्लेख भए बमोजिम जलचरको संरक्षणको लागि सुख्खा मौसमको खोलाको बहावको तोकिए बमोजिमको न्यूनतम पानी निरन्तर खोलामा छाड्नुपर्नेछ । साथै स्वीकृत EIA प्रतिवेदनमा उल्लेख भएअनुसार बाँधभन्दा तल्लो तटीय क्षेत्रमा पानी खोलामा छाड्नु र माछाको आवत जावतको लागि सोही प्रतिवेदनमा तोकिए बमोजिम संरचना निर्माण गर्नु पर्ने दायित्व त्यस संस्थाको हुनेछ ।
- (झ) आयोजनाको निर्माण, संचालन तथा सम्भारका लागि कम्पनीले आयात गर्ने निर्माण उपकरण, मेशिनरी, औजार तथा सोको लागि आवश्यक पार्टपुर्जामा विद्युत ऐन, २०४९ तथा अन्य प्रचलित कानून बमोजिमको सुविधा कम्पनीलाई उपलब्ध हुनेछ । अस्थायी निर्माण उपकरण, मेशिनरी औजार तथा सोको लागि आवश्यक पार्टपुर्जाहरू प्रचलित कानून बमोजिम कम्पनीले आयात गर्न सक्नेछ ।
- (ञ) विद्युत ऐन २०४९, विद्युत नियमावली २०१० तथा अन्य प्रचलित ऐन नियमहरूको अधीनमा रही आयोजना कार्यान्वयन तथा संचालन सम्भारको लागि आवश्यक पर्ने विविध स्थानीय अनुमतिपत्र तथा स्वीकृतिहरू, संचार सुविधा, विष्फोटक पदार्थ, पेट्रोलियम पदार्थ (ईन्धन), जग्गा खरीद, पानी, सडक निर्माण, शैक्षिक, स्वास्थ्य सुविधा, हेलिप्याड निर्माण लगायतका कार्यहरू गर्न तथा विदेशबाट आउने सामानहरू आयात गर्नका लागि कम्पनीले अनुरोध गरेमा विद्युत विकास विभाग, ऊर्जा मन्त्रालयले कम्पनीलाई आवश्यक सहयोग गर्नेछ ।
- (ट) स्वीकृत EIA प्रतिवेदनमा निर्माणको चरणमा ठेकेदारले पालना गर्नुपर्ने भनी उल्लेख भएका सम्पूर्ण कार्यहरू र सो कार्यको पालना नहुँदा ठेकेदारको दायित्व समेत स्पष्ट खुल्ने गरी निर्माणको ठेक्का सम्झौता गर्नु पर्नेछ । सो अनुसार भएको ठेक्का सम्झौताको प्रति विभागमा पेश गर्नु पर्नेछ ।
- (ठ) विदेशी मुद्रा लगानी भएको अवस्थामा विद्युत ऐन, २०४९ तथा विदेशी लगानी तथा प्रविधि हस्तान्तरण ऐन, २०४९ बमोजिम विदेशी विनिमयको सुविधा कम्पनीलाई उपलब्ध हुनेछ र यस्तो विदेशी लगानीका सम्बन्धमा विदेशी लगानी तथा प्रविधि हस्तान्तरण ऐन, २०४९ बमोजिम आवश्यक स्वीकृतिहरू लिनुपर्नेछ ।
- (ड) आयोजनाको निर्माण तथा संचालन सम्भारको सम्पूर्ण जिम्मेवारी कम्पनीमा रहनेछ र अनुमतिपत्रको अवधि समाप्त भएपछि विद्युत ऐन, २०४९ मा भएको व्यवस्था र सोमा समय समयमा हुने संशोधन बमोजिम हुनेछ ।
- (ढ) आयोजनाको निर्माण तथा संचालन सम्भारमा कम्पनीले प्रचलित श्रम ऐन तथा श्रम नियमावलीको अधीनमा रही सम्भव भएसम्म बढी स्थानीय सीप, श्रम, वास्तुकला, स्थानीय संस्था, विशेषज्ञ, ठेकेदार तथा निर्माण सामग्री आदिको प्रयोग गर्नुपर्नेछ ।
- (ण) आयोजनाको निर्माण तथा संचालन सम्भार अवधिभर यस किसिमको आयोजनाको लागि उपयुक्त स्तरको वीमाहरू गर्नुपर्नेछ । कम्पनीले आयोजनाको वीमालेखका प्रतिलिपिहरू विद्युत विकास विभाग, ऊर्जा मन्त्रालयमा पेश गर्नुपर्नेछ ।
- (त) आयोजनाको निर्माण तथा संचालन सम्भारका लागि आवश्यक पर्ने सम्पूर्ण सामग्री, मेशिनरी, औजार उपकरण तथा तिनका पार्टपुर्जा ढुवानी गर्ने सम्पूर्ण जिम्मेवारी कम्पनीको हुनेछ ।
- (थ) आय कर तथा अन्य सुविधाहरू प्रचलित कानून बमोजिम हुनेछन् ।
- (द) त्यस संस्थाले नेपाल सरकारलाई नेपालभित्र खपत हुने ऊर्जा र क्षमता वापत प्रचलित ऐन बमोजिमको रोयल्टी देहाय अनुसार बुझाउनु पर्नेछ ।
- अ। जडित किलोवाट वापत : पहिलो टर्बाइन जेनेरेटर युनिट व्यापारिक संचालनमा आएको मितिले १५ पन्ध्र दिनभित्र र तत्पश्चात प्रत्येक वर्ष सोही समयमा ।


आ। ऊर्जा वापत : पहिलो टर्बाइन जेनेरेटर युनिट व्यापारिक संचालनमा आएको ४ चार महिनामा प्रथम पटक र त्यसपछि ४ ४ महिनामा ।

- (ध) आयोजनाको क्षमता सशोधन गरिने भएमा वा सुदृढीकरण गरिने भएमा विद्युत ऐन, २०४९ तथा विद्युत नियमावली २०१० बमोजिम स्वीकृतिका लागि आवश्यक पर्ने दायित्व कम्पनीको हुनेछ ।
- (न) त्यस संस्थाको स्वामित्वको संरचनामा कुनै किसिमको परिवर्तन गर्नुपर्मा सोको पूर्व जानकारी ऊर्जा मन्त्रालयलाई दिनुपर्नेछ ।

- (प) यस आयोजनाको Upstream/Downstream मा प्रस्तावित, निर्माणाधीन वा संचालनमा रहेका जलविद्युत आयोजनाहरूलाई भौतिक रूपले असर नपर्ने एवं ती आयोजनाहरूसँग समन्वय गरी आयोजनाको निर्माण तथा संचालन कार्य गर्नुपर्नेछ ।
- (फ) आयोजनाको Testing and Commissioning गर्नुको सात (७) दिन अगावै विद्युत विकास विभागलाई अनिवार्य रूपमा जानकारी गराउनु पर्नेछ ।
- (ब) आयोजनाको व्यापारिक उत्पादन भएको ३ महिनाभित्र आयोजनाको प्राविधिक तथा आर्थिक पक्ष समेटिएको ३३ प्रति कार्य सम्पन्न प्रतिवेदन (Project Completion Report) तथा निर्माण भए बमोजिमका नक्शाहरू (As-built Drawings) विद्युत विकास विभागमा पेश गर्नुपर्नेछ ।
- (भ) यस अनुमतिपत्रमा उल्लिखित शर्तहरूमा थपघट वा कुनै संशोधन गर्नुपरेमा प्रचलित कानूनको अधीनमा रही आवश्यकता एवं औचित्यताका आधारमा नेपाल सरकार, ऊर्जा मन्त्रालय र त्यस संस्थाको आपसी सहमतिमा गर्न सकिनेछ ।
- (म) विद्युत उत्पादन अनुमतिपत्रको अवधिभर कुनै कार्यको सिलसिलामा कसैको घर जग्गामा प्रवेश गर्नु परेमा सम्बन्धित व्यक्तिलाई पूर्व सूचना दिएर मात्र त्यस्तो घर जग्गामा प्रवेश गर्न सकिनेछ । त्यसरी प्रवेश गर्दा कुनै हानी-नाक्सानी हुन गएमा अनुमतिपत्र प्राप्त व्यक्त वा संस्थाले नै क्षतिपूर्ति दिनुपर्नेछ ।
- (य) आयोजना निर्माण गर्दा अरु कुनै आयोजना वा भौतिक संरचना, व्यक्ति वा जमिनलाई प्रभाव पर्ने भएमा प्रचलित कानून बमोजिम क्षतिपूर्ति दिनुपर्नेछ ।
- (र) आयोजनाको निर्माण तथा संचालनको लागि आवश्यक पर्ने निजी जग्गा सम्बन्धित जग्गा धनीहरूसँग खरीद गरी प्रवर्द्धक कम्पनीको नाममा दर्ता गर्नुपर्नेछ । आयोजनाको लागि खरीद भएको जग्गा बिक्रीवितरण गर्न पाइने छैन ।
- (ल) अनुमतिपत्रको अवधिको अन्त्यमा आयोजना चालु हालतमा निःशुल्क नेपाल सरकारलाई हस्तान्तरण गर्नुपर्नेछ । हस्तान्तरण सम्बन्धी विधि र प्रक्रिया समय समयमा नेपाल सरकारले निर्देशन गरे बमोजिम हुनेछ र आयोजना हस्तान्तरण गर्दा आयोजनाको निर्माण तथा संचालनको लागि खरीद गरिएको जग्गाजमिन समेत नेपाल सरकारलाई निःशुल्क हस्तान्तरण गर्नु पर्नेछ ।
- (व) विद्युत ऐन २०४९ को दफा ३३ (२) बमोजिम अनुमतिपत्र प्राप्त संस्थालाई आयोजना प्रयोजनका लागि आवश्यक जग्गा प्राप्त गराईदिन वा लिजमा उपलब्ध गराउन नेपाल सरकारले आवश्यक सहयोग गर्ने छ ।
- (श) नेपाल सरकार, ऊर्जा मन्त्रालयको स्वीकृति बिना यो अनुमतिपत्र बिक्री वा हस्तान्तरण गर्न पाइने छैन ।



अनुमतिपत्र दिने अधिकारीको

सही : 
 नाम : सुमन प्रसाद शर्मा
 पद : सचिव
 : ऊर्जा मन्त्रालय
 मिति : २०७३/०२/०३





नेपाल सरकार
वन तथा भू-संरक्षण मन्त्रालय

वन विभाग

४-२२७५७४
४-२२०३०३
४-२२१२३१
४-२१६३७९
४-२२१७४४
फ्याक्स : ४-२२७३७४



(कृपया पत्रोत्तरमा प्राप्त पत्र संख्या
र मिति उल्लेख गर्नुहोला ।)

वयरमहल,
काठमाडौं, नेपाल

प्राप्त पत्र संख्या र मिति :

पत्र संख्या :- २१३१ ०७१७२ (वन संरक्षण)

च. नं. :- ३०८

मिति: २०७२/११/७

विषय: राय पेश गर्ने सम्बन्धमा ।

श्री जिल्ला वन कार्यालय
तनहुँ ।

तनहुँ हाइड्रोपावर लिमिटेड
तनहुँ जलविद्युत आयोजना
दर्ता नं. २३९
मिति: २०७२/०९/०८

प्रस्तुत विषयमा वन तथा भू-संरक्षण मन्त्रालय, वन उद्यम तथा व्यवस्थापन महाशाखाको प.सं.व.सं. तथा व्य.०७१७२ च.नं.१६९ मिति २०७२/११/३ को पत्रबाट तनहुँ जलविद्युत आयोजना (१२७ मे.वा.) का लागि आवश्यक वन क्षेत्रको जग्गा प्रयोग गर्न र रुखहरु हटाउन माग गरिएको विषयको पत्रको छायाँकपी र सो साथ संलग्न उक्त आयोजना संग सम्बन्धित EIA प्रतिवेदन लगायतका कागजातहरु आवश्यक कारवाहीका लागि वन विभागमा प्राप्त हुन आएको हुँदा सो सम्बन्धमा तनहुँ जलविद्युत आयोजना (१२७ मे.वा.) को लागि माग भएको जग्गाको स्थलगत निरिक्षण र जाँचबुझ गरी सो को क्षेत्रफल, चारकिल्ला, नापी फिल्डबुक एवं नक्सा, जि.पि.एस.को-अर्डिनेट विवरण र नक्सा, सो जग्गामा रुख विरुवा पर्ने भए सो को लगत, सामुदायिक/कबुलियती वनमा पर्ने नपर्ने, यदि पर्ने भए सा.व.उ.स./क.व.स.को राय सहितको निर्णय, उक्त आयोजना राष्ट्रिय प्राथमिकता प्राप्त आयोजना हो वा होईन? आयोजनाबाट वन तथा भू-जैविक वातावरणमा पर्ने प्रभाव, उक्त आयोजनालाई वन क्षेत्रको जग्गा उपलब्ध गराउनुपर्ने हो वा होईन? सो को अवस्था र विकल्पको विश्लेषण एवं प्रस्तावित कार्यले ओगट्ने वन क्षेत्रको जग्गाको सट्टाभर्ना दिने सम्बन्धि सुनिश्चतता, स्वीकृत वातावरणीय अध्ययन लगायत अन्य जो जे थप आवश्यक पर्ने हो ती सम्पूर्ण विवरणहरु लिई बुझी वन ऐन २०४९, वन नियमावली २०५१, वातावरण संरक्षण ऐन तथा नियमावली र वन क्षेत्रको जग्गा अन्य प्रयोजनका लागि उपलब्ध गराउने कार्यविधि २०६३ बमोजिम जिल्ला वन अधिकृतको एकीन राय टिप्पणीसाथ पेश गर्नु हुन EIA प्रतिवेदन लगायतका कागजात यसै साथ संलग्न गरी पठाइएको व्यहोरा आदेशानुसार अनुरोध छ ।

(उत्तम थापागाई)

स.वन संरक्षण अधिकृत

बोधार्थ:

श्री तनहुँ हाइड्रोपावर लिमिटेड

थापाथली, काठमाडौं : आवश्यक सहयोगका लागि अनुरोध छ ।



नेपाल सरकार
वन तथा वातावरण मन्त्रालय
विहदरवार, काठमाडौं

श्री तनहुँ हाइड्रोपावर लिमिटेड
का. नं. १६९
२०७२/११/५



नेपाल सरकार
वन तथा भू-संरक्षण मन्त्रालय

पत्रोत्तरमा पत्र संख्या मिति उल्लेखित हुनु अपेक्षित

वन तथा भू-संरक्षण मन्त्रालय

EX: पो.ब.नं. : ३
सिंहदरबार, काठमाडौं

(वन उद्यम तथा व्यवस्थापन महाशाखा)

पत्र संख्या:-

चलानी नं.:- १६२ व सं तथा व्य. ०७१०७२

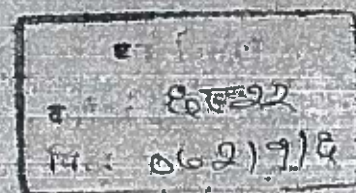
प्राप्त पत्र संख्या र मिति:

मिति: २०७२।१।

विषय : कारबाही संबन्धमा ।



श्री वन विभाग
बबरमहल ।



उपरोक्त संबन्धमा उर्जा मन्त्रालयको प.सं.०७१०७२ (वातावरण) च.नं.६१३ मिति २०७१।१२।२३ को तनहुँ जलविद्युत आयोजना (१२७ मे.वा.)का लागि आवश्यक वन क्षेत्रको जग्गा प्रयोग गर्न र रुखहरु हटाउन माग गरिएको विषयको पत्रको छाँयाकपी र सो साथ सलग्न उक्त आयोजनासंग संबन्धित EIA प्रतिवेदन लगायतका कागजातहरु समेत यसै पत्रसाथ सलग्न राखी आवश्यक कारबाहीका लागि पठाईएको व्यहोरा आदेशानुसार अनुरोध छ ।

(सागर कुमार रिमाल)
उप सचिव (प्रा.)

म. ए. व. मन्त्रालय
काठमाडौं

२०७२।१०।०६





४५९ वातावरण
C-28

नेपाल सरकार विज्ञान, प्रविधि तथा वातावरण मन्त्रालय

नेपाल सरकार
प्रविधि तथा वातावरण मन्त्रालय
वातावरण मूल्याङ्कन शाखा

स.स.न
६३९
०६२-८-२

पत्र संख्या :
च.नं. : २३६६

मिति : २०७२।०।२०

विषय :- पुरक वातावरणीय प्रभाव मूल्याङ्कन सम्बन्धमा ।

श्री उर्जा मन्त्रालय
सिंहदरबार, काठमाण्डौ ।

नेपाल सरकार
उर्जा मन्त्रालय
च.नं. १८२६
मिति ८/२९

उपर्युक्त विषयमा तहाँको मिति २०७२।०।१६ च.नं. १८० को पत्रको सन्दर्भमा लेखिदैछ । उक्त पत्रमा उल्लेख भए अनुसार तनहुँ जलविद्युत आयोजना (१२७) मे.वा. को वातावरणीय प्रभाव मूल्यांकन प्रतिवेदन यस मन्त्रालयबाट मिति २०६६।०।१५ मा स्वीकृति पाएको । हाल उक्त आयोजनाको क्षमता वृद्धि हुन गई १४० मेघावाट हुन आएको र आयोजनाको संरचना परिवर्तन हुने भएको हुदाँ सो सम्बन्धी पुरक वातावरणीय प्रभाव मूल्याङ्कन अध्ययनको सहमतिको लागि अनुरोध भई आएको सन्दर्भमा कारवाही हुँदा पुरक वातावरणीय प्रभाव मूल्याङ्कन निर्देशिका २०७१ को दफा ६ अनुसार पुरक वातावरणीय प्रभाव मूल्याङ्कन गर्दा वातावरणमा नकारात्मक असर पर्न सक्ने देखिएमा त्यस्तो प्रभावको क्षति प्रस्तावकले आफ्नै खर्चमा न्यूनिकरण गर्ने र सोही निर्देशिकाको दफा ८ मा उल्लेख गरिए अनुसार क्षेत्र निर्धारण प्रतिवेदन र कार्यसूचि स्वीकृत गराउने बाहेकका अन्य प्रक्रियाहरु छुट्टै सार्वजनिक सुनुवाई गरेको र स्थानिय निकायको सिफारीस संलग्न राखी वातावरण संरक्षण ऐन, २०५३ र वातावरण संरक्षण नियमावली २०५४ बमोजिम हुने गरि पुरक वातावरणीय प्रभाव मूल्याङ्कन गर्न अनुमति दिने भनि नेपाल सरकार (मन्त्रिस्तर)को मिति २०७२।०।१७ मा निर्णय भएको व्यहोरा जानकारीको लागि अनुरोध छ ।

(Signature)
०६.११.२०
(सुमिल निरौला)
शाखा अधिकृत

(Signature)
०६.११.२०
च.नं. १८२६
मिति ८/२९

नेपाल सरकार
विज्ञान, प्रविधि तथा वातावरण मन्त्रालय
सिंहदरबार, काठमाण्डौ



नेपाल सरकार

४२११५१६
४२११८८६

ऊर्जा मन्त्रालय

फ्याक्स ९७७-१-४२११५१०

सिंहदरबार, काठमाण्डौ

प.सं. ०७४/०७३ (वातावरण)
च.नं. १८०

मिति : २०७२/०७/१६

विषय : तनहुँ जलविद्युत आयोजना (१४० मे.वा.) को पूरक वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदन बारे ।

श्री विज्ञान, प्रविधि तथा वातावरण मन्त्रालय,
सिंहदरबार ।

उपरोक्त विषयमा यस तनहुँ जलविद्युत आयोजना (१२७ मे.वा.) वातावरणीय प्रभाव मूल्याङ्कन प्रतिवेदन तत्कालिन वातावरण मन्त्रालयको मिति २०६६/०७/१५ को निर्णयानुसार स्वीकृत भएको थियो । हाल यस आयोजनाको जडित क्षमता १४० मे.वा. भएको र आयोजनाको संरचना परिवर्तन हुने भएको हुँदा सो सम्बन्धी पूरक वातावरणीय प्रभाव मूल्याङ्कन अध्ययन अनुमतिको लागि पूरक वातावरणीय प्रभाव मूल्याङ्कन निर्देशिका, २०७१ अनुरूप यस मन्त्रालयको मिति २०७२/०६/२७ को सचिवस्तरीय निर्णयानुसार सिफारिस साथ पठाईएको व्यहोरा निर्देशानुसार अनुरोध छ । पत्र साथ एक प्रति कागजात संलग्न छ ।

(Signature)

सविना खर्बुजा
(हाइड्रोपावर इन्जिनियर)

बोधार्थ:

श्री विद्युत विकास विभाग,
अनामनगर, काठमाण्डौ ।

०/८





नेपाल सरकार
ऊर्जा मन्त्रालय

विद्युत विकास विभाग

(..... अनुमतिपत्र)

अनुमतिपत्र
विद्युत विकास विभाग
२०५०

फोन नं. ४४७४८५२, ४४८०२७६
४४७८०८५, ४४८०३२६
४४८०४२५, ४४९६८००
४४८९६९४, ४४७६९९०

फ्याक्स (९७७-९)-४४८०२५७

पोष्ट बक्स नं. २५०७

थापागाउँ, अनामनगर

काठमाडौं, नेपाल

मिति: २०७३ ११ १९

पत्र संख्या :- ४८३/६४

च नं ६८४

विषय:- तनहुँ जलविद्युत आयोजनाको विद्युत उत्पादनको अनुमतिपत्र बारे ।

श्री तनहुँ हाइड्रोपावर लि.



Trade Tower, थापाथली काठमाडौं

फोन : ०१-५१११११७, ५११११२९, ५१११११८

फ्याक्स : ०१-५११११२९

पो.ब.नं. :

उपर्युक्त विषयमा त्यस तनहुँ हाइड्रोपावर लि.ले तनहुँ जलविद्युत आयोजनाको विद्युत उत्पादनको अनुमतिपत्र (वि.वि.वि. ०७२/७३ वि.उ. १५७)को संशोधनका लागि दिएको दरखास्तउपर कारवाही हुँदा उक्त आयोजनाको क्षमता १२७ मे.वा. बाट १४० मे.वा.मा बृद्धि गर्न सैद्धान्तिक सहमति प्रदान गरिएको व्यहोरा नेपाल सरकार, उर्जा मन्त्रालय (सचिवस्तर) को मिति २०७३/११/१९ को निर्णयानुसार जानकारी गराइन्छ ।

 THL Registration No: ४६४ Date: २०८३/०९/१९		
For	Action	Copy
Project Cons: Div		
E/M Div		
Engg. Div		
Finance Div		
HR and Admin Div	✓	
Company Secretary		
Site Office		
File		✓
Signature		

(सविन दलाल)

ईन्जिनियर





नेपाल सरकार

वातावरण मन्त्रालय

नेपाल विद्युत प्राधिकरण

इन्जिनियरिङ सेवा

दर्ता नं. ५५९

मिति: ०८६/६/११

पत्र संख्या :-

च. नं. :- ५२०

नेपाल विद्युत प्राधिकरण

वातावरण विभाग

पदार्थ

दर्ता २२८

मिति ०८६/६/१२

मो. दर्ता

मिति

११/०६

०८६/६/१२

मिति : २०६६/७/५

विषय: माथिल्लो सेती जलाशययुक्त जलविद्युत आयोजनाको परिमार्जित EIA प्रतिवेदन स्वीकृत गरिएको बारे ।

श्री उर्जा मन्त्रालय,
सिंहदरबार ।

तहाँको मिति २०६४/७/२६ को पत्रसाथ प्राप्त भएको उपर्युक्त आयोजनाको EIA प्रतिवेदन र प्रस्तावको मिति २०६६/६/१८ को पत्रसाथ यस मन्त्रालयमा पेश भएको सोही आयोजनाको परिमार्जित EIA प्रतिवेदन नेपाल सरकार (सचिवस्तर) को मिति २०६६/७/५ को निर्णयानुसार स्वीकृत गरिएको व्यहारा अनुरोध छ ।

(भाइराजा मानन्धर)
सि. डि. ई.

बोधार्थ:

श्री नेपाल विद्युत प्राधिकरण,
देवरामार्ग, काठमाडौं ।

(स्वीकृत EIA प्रतिवेदनको प्रति श्री उर्जा मन्त्रालयमा
तहाँबाट सीधै पठाउने व्यवस्था हुन)

श्री नेपाल विद्युत प्राधिकरण,
वातावरण तथा सामाजिक अध्ययन विभाग,
जमल, काठमाडौं ।

नेपाल विद्युत प्राधिकरण	
महाप्रबन्धनको कार्यालय	
इन्जिनियरिङ	
श्री आयोजना विकास विभाग	श्री तस्कन केन्द्र विभाग
श्री बाटो, दुरा दुरा सर्किट प्रयोगशाला	श्री मापनको नियन्त्रि १ एन.वि.या.
श्री ड.म.डि. महाप्रबन्ध	श्री प्रशासन/श्री सेवा
श्री वातावरण तथा सामाजिक अ. विभाग	
१. आ.का.गर्ने	२. पेश गर्ने
४. परिपत्र गर्ने	५. फाईल गर्ने
३. छलफल गर्ने	तही मिति

श्री उप-कार्यकारी निर्देशक, अर्थ
श्री उप-कार्यकारी निर्देशक, प्रशासन
श्री उप-कार्यकारी निर्देशक, अभियान्त
श्री परियोजना प्रमुख, मध्यम-परा
श्री निर्देशक, राज्यालय
श्री योजना, अनुगन्त तथा योजना प्रविधि श्री



०८६/६/१२

Appendix B

Participants of Public Consultation





नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
खरिपाटी, भक्तपुर

तनहुँ जिल्लामा प्रस्तावित तनहुँ जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.बाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिबाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागबाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयवासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो ।

मिति :- २०७३-१-१३

स्थान :- माझकोट

समय :-

उपस्थिति

क्र.सं.	नाम थर	पेशा/पद	ठेगाना/संस्था	सम्पर्क नं.	सही
१	बलराम मिश्र	व्यापारी	माझकोट-८	९८२६०३६५३९	
२	पौड आदिकारी	निर्माण व्यवसायी	व्यापारी-११	९८१६१००३६२	
३	द्विरेन्द्र बापा	क्षेत्रिद्वय	माझकोट-९	९८१६१००६६८३	
४	लक्ष्मण रवाण	व्यापारी	माझकोट-८	९८१६२३३८८३	
५	मिर्च रानाथराय	विद्यार्थी	माझकोट-९	९८१६१०३८०१	
६	बिर वसन्त राय	वैद्यार्थी	मिर्चा १	९८२६०२११३६	
७	मन्नासिंह भण्डारी	कृषि	माझकोट-९	९८१६१०२०५२	
८	देव वसन्त	वैद्यार्थी	मिर्चा	९८१७१११६५५	
९	मोति रानाथ देव	व्यापारी	मिर्चा	०६२-५६२२०६	
१०	नारायणदत्त भण्डारी	कृषि	मिर्चा-२	९८१६६१००६२	
११	सन्तोषी कुमारी	ग/	डा.गो.गो. १		
१२	David Shrestha	Student	Bhimad	९८०५७१५५९	
१३	राक्षस	Student	Bhimad-1	९८५६०९८१६९	
१४	प्रकाश गौडेल	स.प्रबन्धक	ने.वि.प्रा.	९८२९९२६३३३	
१५	गोबिन्द मुल्गी	सि.वि.प्रा.	ने.वि.प्रा.	९८२९८२४०९	
१६	सुन्दर बज्राचार्य	न्यायिक	"	९८२९९३१०५	

राय सुझाव :

- १) तनहुँ जलविद्युत आयोजनाबाट उत्पन्न हुने विद्युतमा तनहुँ जिल्लाको विकासका लागि दिनुपर्ने।
- २) सामाजिक नियन्त्रण गर्नुपर्ने।
- ३) स्थानीयकालासिद्ध र टोलगाडीको व्यवस्था।
- ४) मोरमी तथा वनारमी तालको विनी योजना तालिमिकोषमा माईनादकलाई।



नेपाल विद्युत प्राधिकरण
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खरिपाटी, भक्तपुर

तनहुँ जिल्लामा प्रस्तावित तनहुँ जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.बाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिबाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागबाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो।

मिति: २०७३/१/१५ स्थान: - जामुने-६ श्रीरविचन्द्र प्रा. वि. जामुने-६ लनेई
उपस्थिति समय: - १.३०

क्र.सं.	नाम थर	पेशा/पद	ठेगाना/संस्था	सम्पर्क नं.	सही
१	मिनराज घिमिरे	बि.प्र.उ.	जामुने-६	९८४९७९०५६	
२	रामकृष्ण रानाभा	बि.प्र.उ.	" "	९८४९७९३८९	
३	धनकुमार थापा	बि.प्र.उ.	" "	९८४९७९६५२	
४	दुरेन्द्रकुमार श्रेष्ठ	का.स्थाय	" "	९८४९८८८५२	
५	लतीमाया	स.प्र.	" "	९८७९७९३९५	
६	मधुमाया थापा	स.प्र.	वि. ०७. ल.	९८०९७५४३३	
७	सिद्ध वर	आविर्भाव	जामुने-६		
८	बम बहादुर अधिकारी	-	" "	-	
९	प्रकाश गौरी	ना.क.जी	ने.वि.प्रा.	९८२९९२६३३३	
१०	ज्योत्सना मुखर्जी	सि.प्र.उ.	ने.वि.प्रा.	९८२९८८५७१	
११	सुभाष च. जोशी	ना.क.जी	" "	९८२९९१००५	
१२					
१३					
१४					
१५					



नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
खरिपाटी, काठमाडौं

- प्रस्तावित क्षेत्रका बासिन्दाहरुलाई जानकारी गराई कलका कुलुसाल माध्यमबाट पर्यावरणीय क्षेत्रमा आबद्ध हुने गरी कार्यप्रदर्शन गराइने।
- बासिन्दाहरुलाई सूचनाले आगो राखेर राखेर हुने।
- वैज्ञानिक छुट्टै जिम्मेवारी सहित सहयोग हुने।
- सामाजिक कलहापिछ (प्रभावित क्षेत्रका दुवै) को कार्यप्रदर्शन गराइने।
- उक्त क्षेत्र जाने लगेरमा को योजनाको बारे - रिपोर्ट, रानी।
- गोपनी बासिन्दा दे पक्की गारे हुने।
- सिद्ध वरले सामाजिक ११ लगेरमा १० प्रभावित हुने भएकाले वैज्ञानिक वर प्रगती अहिले देखि को व्यवस्था हुने।

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खरिपाटी, भक्तपुर

तनहुँ जिल्लामा प्रस्तावित तनहुँ जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.बाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिबाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागबाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो ।

मिति :- २०७३/०१/१६ स्थान :- कोटकरबार - ट, जौघ्याडी समय :-
उपस्थिति

क्र.सं.	नाम थर	पेशा/पद	ठेगाना/संस्था	सम्पर्क नं.	सही
१	रविक बहादुर थापा	कृषि	कोटकरबार-ट	९८१७१८०६३७	Ravik
२	दिपक श्रेष्ठ	मै.वि.प्र.	मै.वि.प्र. - ७	९८०६७०२२३१	दीपक
३	रविन्द्र थापा	कृषि	कोटकरबार-ट	९८१६५४५३३४	रविन्द्र
४	जीवन लाल थापा	कृषि	कोटकरबार-ट	९८२६१६२२२६	जीवन
५	दान बहादुर आली	हाथी	" - ३	९८१६१०१७८७०	दान
६	मिना चौधरी	बापार	मोक्तारबार	९८१२१२६०८७६२	मिना
७	लाल बहादुर थापा	कृषि/म.वि.	कोटकरबार-३		लाल
८	नवीन्द्र मुल्मी	इन्जिनियर	मै.वि.प्रा	९८१३४८५७११	नवीन्द्र
९	प्रकाश जोडेल	नोकरी	मै.वि.प्रा.	९८२९९२६३३३	प्रकाश
१०	कृष्ण प. पौडेल	नोकरी	"	९८२९९५१०७५	कृष्ण
११					
१२					
१३					
१४					
१५					

राय सुझाव :

- १) जलविद्युत विद्युतको गतिविधि
- २) स्थानीय विकास समिति/संस्था
- ३) प्रस्तावित संस्थाको पुनर्स्थापना - १९९९
- ४) वातावरण संरक्षणमा स्थानीय स्थिति
- ५) सीपमूलक वाणिज्य तथा रोजगारीको व्यवस्था



नेपाल विद्युत प्राधिकरण
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खरिपाटी, भक्तपुर

तनहुँ जिल्लामा प्रस्तावित तनहुँ जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.बाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिबाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागबाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो।

मिति :- २०७३/०९/१७ स्थान :- मिमाद - १

समय :-

उपस्थिति

क्र.सं.	नाम थर	पेशा/पद	ठेगाना/संस्था	सम्पर्क नं.	सही
१	शिव कुमार शर्मा	व्यापारी	मिमाद-१	९८४६०२०९२३	मिमाद-१
२	अश्विमान शर्मा	वानुज्यवला	मिमाद-१	९८४६१९०२३१	मिमाद-१
३	गोपाल शर्मा	होल्डर	मिमाद-१		मिमाद-१
४	नारायण शर्मा	व्यापारी	मिमाद-१	९८४६१०६०२८	मिमाद-१
५	गोपाल शर्मा	व्यापारी	मिमाद-१	९८४६०२०४०६	मिमाद-१
६	राजेश शर्मा	होल्डर	मिमाद-१	९८४६१०६२६९	मिमाद-१
७	केशव शर्मा	व्यापारी	मिमाद-१	९८४६१२४००९	मिमाद-१
८	हेम शर्मा	व्यापारी	मिमाद-१	९८४७१०४६८९	मिमाद-१
९	हेम शर्मा	मिमाद-१	मिमाद-१	९८४६१२०६८९	मिमाद-१
१०	हरिप्रताप शर्मा	व्यापारी	मिमाद-१	९८४६३४३०९१	मिमाद-१
११	प्रकाश शर्मा	नोकरी	ने.वि.प्रा.	९८४७१२४३३३	मिमाद-१
१२	नारायण शर्मा	वि.वि.प्रा.	"	९८४७१२४३३३	मिमाद-१
१३	नारायण शर्मा	नोकरी	"	९८४७१२४३३३	मिमाद-१
१४					
१५					

राय सुझाव :

- १) मिमाद जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.बाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिबाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागबाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो।
- २) मिमाद जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.बाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिबाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागबाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो।



नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
खरिपाटी, भक्तपुर

तनहुँ जिल्लामा प्रस्तावित तनहुँ जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.वाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिवाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागवाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयवासी, सरोकारवालाहरु विच निम्न भित्ति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुभाव संकलन गरियो ।

मिति :- २०७३/०१/१८ स्थान :- रानीपोखरी - ९ मृषिङ्पाटन समय :-
उपस्थिति

क्र.सं.	नाम थर	पेशा/पद	ठेगाना/संस्था	सम्पर्क नं.	सही
१	गोपाल शर्मा	हडप	रानीपोखरी ९	९८२६०२४४	
२	वीर राय जोशी	"	"		
३	मुक्ति पौडेल	व्यापार	"	९१५६००५७८९	
४	शिवराज जोशी	विद्यार्थी		९८५६५५४८९	
५	शुक्रराज जोशी	"	"		
६	फणिशिर थापा	"	"		
७	मुन्तीनाथ जोशी	"	"	९८५६५२१२२	
८	वै.वा. थापा	"	"		
९	दानसुधाम जोशी	"	"		
१०	सुनताम जोशी	"	"	९८५६५५५५५	
११	सुनताम विक्रम	"	सामुद्रिक - २	९८०६५३१८५	
१२	सुनताम विक्रम	"	"	९८५६५२३५६	
१३	गणेश प्रसाद जोशी	व्यापार	रानी पोखरी - ९	९८५६५१८८	
१४	प्रकाश जोशी	बोक्ले	ने.वि.डा.	९८५६५३३३	
१५	गोबिन्द मुल्ल	सि.वि.डा.	ने.वि.डा.	९८५६५१११	
१६	सुनताम जोशी	नाथ	"	९८५६५१८८	

राय सुभाव :

- १) प्रभावित व्यक्तित्व तथा संस्थाको शान्ति र अन्तर्गत हुने प्रभावहरुको बारेमा
- २) प्रभावित संस्थाको शान्ति र अन्तर्गत हुने प्रभावहरुको बारेमा
- ३) शान्ति र अन्तर्गत हुने प्रभावहरुको बारेमा
- ४) शान्ति र अन्तर्गत हुने प्रभावहरुको बारेमा
- ५) शान्ति र अन्तर्गत हुने प्रभावहरुको बारेमा
- ६) शान्ति र अन्तर्गत हुने प्रभावहरुको बारेमा



खरिपाटी, भक्तपुर

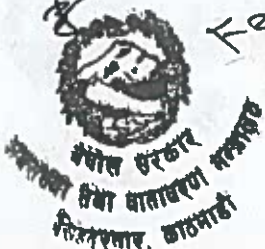
तनहूँ जिल्लामा प्रस्तावित तनहूँ जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.बाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिबाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागबाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो ।

मिति :- २०७३/०७/१९ स्थान :- काट्टी शिवपुर-१, बैलटार समय :-
उपस्थिति

क्र.सं.	नाम थर	पेशा/पद	ठेगाना/संस्था	सम्पर्क नं.	सही
१	कुमल लखारु थापा	वि.प.प.अध्यक्ष	श्री मुन्ना भा.नि.	१८४८१२१८६८	22
२	मुपाल थापा	प्रभावित क्षेत्र जेठ विकास अधिकारी	कडुमिनापु	१८०३५३७१०८	Shree
३	कृष्ण आले	सुदोडा गा.वि.स.	प्रभावित क्षेत्र	१८४६१३२४५१	Shree
४	दिरा सिंह थापा	" पदस्थ	"	१८५६०६०८८६	Shree
५	धमन सिंह थापा	"	"	१८१०६२६९०२	Shree
६	टेकु लखारु गज्ज	"	"	१८४६०९३३७८	Shree
७	धन लखारु आले	"	"	१८२६१६८६८७	Shree
८	केदार थापा भण्डारी	ड.प्र.	श्री मुन्ना भा.नि.	१८४६०६५००२	Shree
९	नगेन्द्र मुल्की	सि.इ.	ने.वि.प्रा.	५८६३४८२७११	Shree
१०	प्रकाश जोशी	लोकी	ने.वि.प्रा.	५८२९९२६३३३	Shree
११	अनूप-प.ज.१२७	"	"	५८२९९१५०६६	Shree
१२					
१३					
१४					
१५					

राय सभावा :

- [illegible]



नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
खरिपाटी, भक्तपुर

तनहुँ जिल्लामा प्रस्तावित तनहुँ जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.बाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिबाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागबाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयवासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो ।

मिति :- २०७३-०९-२० स्थान :- डा. ए. ए. पाण्डे समय :-
उपस्थिति

क्र.सं.	नाम थर	पेशा/पद	ठेगाना/संस्था	सम्पर्क नं.	सही
१	च्यान्टी माया थापा	स.अ.	श्री जलशक्ति प्रा.वि.	९८५६२१५९७६	-२१-८११५५
२	दानु माया थापा	शिक्षक	"	९८५६३११४८१	३५५५
३	देबे व. थापा	"	"	९८५६१५६९३५७	३५५५
४	मीना माया उगले	"	"	९८०६६२८१९६	३५५५
५	बिष्णु राना	"	"	९८०५८९१९९६	३५५५
६	शान्ता काठले	"	"	९८५६८७२२६३	३५५५
७	रुकु नेपाली	"	"		३५५५
८	लेखनाशयण चौधरी	का. सदस्य/जी	"	३५५५	३५५५
९	प्रकाश जोशी	लोकजी	ने. वि. सं.	९८५९९५६३३३	३५५५
१०	नवीन्द्र भुसाल	सि. वि. वि.	"	९८५३३८५५९५	३५५५
११	सुभाष च. जोशी	संस्कृत	"	९८५९९५००६६	३५५५
१२					
१३					
१४					
१५					

राय सुझाव :

- १) प्रस्तावित वातावरण तथा सार्वजनिक सुविधाको डायग्नोसिस र विश्लेषण
- २) स्थानीय जनसमुदायको रोजगारी
- ३) काटेक्नास्ट्यान्ड र स्थानीय लोक नालिकाको व्यवस्था



नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
खरिपाटी, भक्तपुर

तनहुँ जिल्लामा प्रस्तावित तनहुँ जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.बाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिबाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागबाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो ।

मिति :- २०७३/०९/२९ स्थान :- माल न.पा.
उपोस्थिति

समय :-

क्र.सं.	नाम थर	पेशा/पद	ठेगाना/संस्था	सम्पर्क नं.	सही
१	सन्तु श्रेष्ठ		घास ६		सन्तु
२	पद्म राय श्रेष्ठ	विद्युत	"	९८४६०६८२६५	पद्म
३	मनवहादुर श्रेष्ठ	सुपि	बेनीपाटन-६	९८४६०५५८२३	मनवहादुर
४	राज श्रेष्ठ	मोडिफा	" "	९८४६०६८२६५	राज
५	गोविन्द श्रेष्ठ	कृषी	"	९८४६०६८२६५	गोविन्द
६	प्रकाश श्रेष्ठ	नोकरी	ने.वि.पा.	९८४६०६८२६५	प्रकाश
७	गोविन्द श्रेष्ठ	लि. इ.	ने.वि.पा.	९८४६०६८२६५	गोविन्द
८	कमल श्रेष्ठ	नोकरी	"	९८४६०६८२६५	कमल
९					
१०					
११					
१२					
१३					
१४					
१५					

राय सुझाव :

यसको वरिवाइत गर्ने बाटोलाई नै १५५१८ गुनै गर्ने /
(पाख्रि कुनाको बाटो)



नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
खरिपाटी, भक्तपुर

तनहुँ जिल्लामा प्रस्तावित तनहुँ जलविद्युत आयोजनाको जडित क्षमता १२७ मे.वा.वाट १४० मे.वा. पुऱ्याइने भएकाले उक्त क्षमता वृद्धिवाट हुनसक्ने वातावरणीय प्रभावहरुका बारेमा वातावरण तथा सामाजिक अध्ययन विभागवाट पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary EIA) तयार गर्ने सिलसिलामा खटिआएको वातावरणीय अध्ययन टोली तथा स्थानीयवासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुझाव संकलन गरियो ।

मिति :- २०७३/०१/२१ स्थान :- जलविद्युत, बेंनीपाटन समय :-

उपस्थिति

क्र.सं.	नाम थर	पेशा/पद	ठेगाना/संस्था	सम्पर्क नं.	सही
१	जल पुन	अध्यक्ष	बेंनीपाटन टोल	९८४६२४६२८९	
२	कमो- हिलिहल्ले थप	अध्यक्ष	पाटन	९८४६२४४५०५	
३	जल पुन	अध्यक्ष	ज.वा.प	९८४६०९१००८	
४	जल वहाउ थापा	अध्यक्ष	खानेपाटन	९८४६०६५१३५	
५	जल वहाउ थापा	अध्यक्ष		९८४६१३१२४९	
६	जल वहाउ थापा	अध्यक्ष	बेंनी पाटन	९८४६१२९४३३	
७	विष्णु गिरी	कृषि	बेंनी पाटन	९८४६०६२२०	
८	कौपिता कुमारी	कृषि	बेंनी पाटन	९८४६०४०३५८	
९	जल वहाउ थापा	कृषि	बेंनी पाटन		
१०	पार्वती गिरी	कृषि	बेंनी पाटन	९८४६०९०६२६	
११	प्रकाश गौरी	स.प्र.व.क	बेंनी पाटन	९८४९९२६३३३	
१२	पुनः जल पुन				
१३	इ. जे. व. थापा				
१४	शिव बज्र/निर्माणा	प.प.प.प.	बेंनी पाटन	९८४६०९०२५०	
१५	पद्मा आर्जुन	गोर्खा	॥		
१६	वासुदेवी ठप	गोर्खा	बेंनी पाटन	९८४६१६०६५५	

१७. ज्योत्स्ना मुखर्जी सि.इ.ए. न.वि.पा ९८४६०६२७५४

१८. राय सुभाष : जल वहाउ थापा न.वि.पा ९८४९९२६३३३

१) आयोजना निर्माणका होक् तहका स्थानिय कार्यला लागू लाग्ने गरी गर्नु पर्ने (विशेष गरी कारो निर्माणका कार्यको)

२) आयोजना निर्माणका होक् तहका प्रादेशिक हुनु पर्ने।

३) वातावरण पानी अन्तर्गतको लागू गर्ने योजनाको लागि प्रादेशिक क्षेत्रको गर्ने कल कल गरी उचित कल पालन गर्ने (पराशर कायम तथा गलत पालन)



नेपाल भू.पू.सैनिक कल्याणकारी क्लब



पत्र संख्या:-

दर्ता नं: २४७९

चलानी नम्बर:-


मिति: ०६२-०९-१५

श्रीमान् नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग,
खरिपाटी, नक्सपुर।

विषय: लोकुरेटी लम्बद्वारा।

महोदय,

उक्त विषय लम्बद्वारा यस आयोजनामा
पनि आवश्यक सम्पूर्ण लोकुरेटीका जिम्मेवारी
यस भू.पू. सैनिक कल्याणकारी क्लबका सम्पूर्ण
सदस्यहरूबाट बफादारी इपुटी गर्न हुन अनुरोध
गर्दछु।


(क्या.हरि बहादुर थापा)
अध्यक्ष

९४५६२४५०५



Appendix C

Documents Related to Public Hearing





Appendix C-I

Public Notice





भञ्ज्याङ

राष्ट्रिय दैनिक

वर्ष ३५ अंक ८८ पृष्ठ ४, २०७३ साउन १३ गते विहीबार, नेपाल सम्बत् १९३६ July 28, 2016 मूल्य- रु. ५ -

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद छाड, रिसिङ्ग रानीपोखरी, माफ्कोट, कोटदरवार, जामुने भञ्ज्याङ्ग, कर्हु शिवपुर, सामुङ्ग भगवतीपुर गा.वि.स.हरू र ब्यास नगरपालिका क्षेत्रमा बसोवास गर्ने स्थानीय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौ ।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय, कर्हुशिवपुर-१ भापुटार, तनहुँ

समय : बिहान १०:३० बजे

आयोजक

वातावरण तथा सामाजिक अध्ययन विभाग
नेपाल विद्युत प्राधिकरण
खरिपाटी, भक्तपुर ।



तनहुँ आवाज

साप्ताहिक

वर्ष २० अंक ३३ दमौली २०७३ साउन १३ गते बिहीबार

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सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना !

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय पभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाड, रिसिङ्ग रानीपोखरी, माभुकोट, कोटदरबार, जामुनेभञ्ज्याङ्ग, काँहुशिवपुर, साभुङ्गभगवतीपुर गाविसहरु र व्यास नगरपालिका क्षेत्रमा बसोवास गर्ने स्थानीय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरुलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौं ।

मिति: २०७३ साल श्रावण १७ गते, सोमबार

स्थान: श्री शुक्ला माध्यमिक विद्यालय, काँहुशिवपुर-१ भापुटार, तनहुँ

समय: बिहान १०:३० बजे

आयोजक

वातावरण तथा सामाजिक अध्ययन विभाग

नेपाल विद्युत प्राधिकरण

खरिपाटी, भक्तपुर



३३ साउन १३ गते बिहीबार JULY.28, 2016

निष्पक्ष खबरको संगालो

तनहुँ उद्घोष

राष्ट्रिय दैनिक

TAHUN UDGHOSH NATIONAL DAILY

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तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाङ, रिसिङ्ग रानीपोखरी, माभकोट, कोतदरवार, जामुने भञ्ज्याङ्ग, काँहु शिवपुर, सावुङ्ग भगवतीपुर गा.वि.स.हरु र व्यास नगरपालिका क्षेत्रमा बसोवास गर्ने स्थानिय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरुलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौ ।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय

काँहुशिवपुर -१ भापुटार, तनहुँ

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राष्ट्रिय दैनिक www.setimadidaily.com.np

वर्ष १० अंक १३७ तनहुँ १३ साउन २०७३ बिहिवार SETIMADI, National Daily Thursday 28 July

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना :

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति,स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाङ, रिसिङ्ग रानीपोखरी, माझकोट, कोटदरवार, जामुने भञ्ज्याङ्ग, काँहु शिवपुर, सावुङ्ग भगवतीपुर गा.वि.स. हरु र व्यास नगरपालिका क्षेत्रमा बसोबास गर्ने स्थानीय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौ ।

तपशिल :

मिति : २०७३ साल श्रावण १७ गते, सोमबार

स्थान : श्री शुक्ला माध्यमिक विद्यालय

काँहुशिवपुर -१ भापुटार, तनहुँ

समय : बिहान १०:३० बजे





राष्ट्रिय दैनिक

दमौली खबर

वर्ष ४ अंक ७ ३०७३ साउन ११ गते शुक्रबार ३०७३/०७३/०७३ DAMAULI KHABAR National Daily

जि.प्र.का.वर्ता नं. ०३३ ०६९ ०७०, तृ.जि.हु.वर्ता नं. ६०३/०७३/०७३

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना !

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मिति: २०७३ साल श्रावण १७ गते, सोमबार

स्थान: श्री शुक्ला माध्यमिक विद्यालय, काँहुशिवपुर-१ भापुटार, तनहुँ

समय: विहान १०:३० बजे

आयोजक

वातावरण तथा सामाजिक अध्ययन विभाग

नेपाल विद्युत प्राधिकरण

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भञ्ज्याङ्ग

राष्ट्रिय दैनिक

वर्ष ३५ अंक १०० पृष्ठ ५, २०७३ साउन १४ गते शुक्रबार, नेपाल सम्वत् १९३६ July 29, 2016 मूल्य- रु. ५/-

सार्वजनिक सुनुवाई कार्यक्रम सम्वन्धि सूचना

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्वन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाव, छाङ, रिसि रानीपोखरी, माफ्कोट, कोटदरवार, जामुने भञ्ज्याङ्ग, काँहु शिवपुर, साभु भगवतीपुर गा.वि.स.हरू र ब्यास नगरपालिका क्षेत्रमा बसोवास गर्ने स्थानीय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौं ।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय, काँहुशिवपुर-१ भन्जपुर, तनहुँ

समय : विहान १०:३० बजे

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नेपाल विद्युत प्राधिकरण

खरिपाटी, भक्तपुर ।



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राष्ट्रिय दैनिक

PRADESHIK KHABAR NATIONAL DAILY

वर्ष १

अंक ९

शुक्रवार, १४ साउन २०७३

July 29 Friday, 2016

PRADES

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मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला सृष्ट्याभिक विद्यालय

काँहुशिवपुर-१ भापुटार, तनहुँ

समय : विहान १०:३० बजे

आयोजक

वातावरण तथा सामाजिक अध्ययन विभाग

नेपाल विद्युत प्राधिकरण

खरिपाटी, भक्तपुर



निष्पक्ष खबरको संगालो

तनहुँ उद्घोष

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मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री.शुक्ला माध्यमिक विद्यालय

काँहुशिवपुर -१ भापुटार, तनहुँ

समय: बिहान १०:३० बजे



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शुक्रवार, श्रावण १४, २०७३

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुर्क वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाड, रिसिङ्ग रानीपोखरी, माभुकोट, कोतदरवार, जामुने भञ्ज्याङ, काहुँशिवपुर, सावुङ्ग भगवतीपुर गाविसहरु र व्यास नगरपालिका क्षेत्रमा बसोवास गर्ने स्थानीय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरुलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौं।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय, काहुँशिवपुर-१ भापुटार, तनहुँ

समय : विहान १०:३० बजे

आयोजक

वातावरण तथा सामाजिक अध्ययन विभाग

नेपाल विद्युत प्राधिकरण

खरिपाटी, भक्तपुर



खोज एवं अनुसन्धानात्मक पत्रकारिताका लागि

प्रादेशिक खबर

राष्ट्रिय दैनिक

PRADESHIK Khabar NATIONAL DAILY

वर्ष १

अंक १०

शनिवार, १५ साउन २०७३

July. 30 Saturday, 2016

PRADES

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाङ, रिसिङ्ग रानीपोखरी, माझकोट, कोतदरवार, जामुने भञ्ज्याङ, काँहु शिवपुर, सावुङ्ग भगवतीपुर गा.वि.स. हरुर व्यास नगरपालिका क्षेत्रमा बसोवास गर्ने स्थानिय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौं।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय

काँहुशिवपुर-१ भाँपुटार, तनहुँ

समय : विहान १०:३० बजे

आयोजक

वातावरण तथा सामाजिक अध्ययन विभाग



नेपाल विद्युत प्राधिकरण

खरिपाटी, भक्तपुर



भञ्ज्याङ्ग

राष्ट्रिय दैनिक

वर्ष ३५ अंक १०१ पृष्ठ ४ २०७३ साउन १६ गते आइतबार, नेपाल सम्बत् १९३६ July 31, 2016 मूल्य- रु. ५/-

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाङ्ग, रिसि रानीपोखरी, माभकोट, कोटवरवार, जामुने भञ्ज्याङ्ग, काँहु शिवपुर, साभु भगवतीपुर गा.वि.स.हरू र न्यास नगरपालिका क्षेत्रमा बसोवास गर्ने स्थानीय सर्वसाधारण, सरोकारवाला सबै राजनीतिक दलका प्रतिनिधिहरूलाई उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौं ।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री सुक्ला माध्यमिक विद्यालय, काँहुशिवपुर-१ भण्डाटार, तनहुँ

समय : विहान १०:३० बजे

आयोजक

वातावरण तथा सामाजिक अध्ययन विभाग

नेपाल विद्युत प्राधिकरण

खरिपाटी, भक्तपुर ।



खोज एवं अनुसन्धानात्मक पत्रकारिताका लागि

प्रादेशिक खबर

राष्ट्रिय दैनिक

PRADESHIK KHABAR NATIONAL DAILY

वर्ष १

अंक ११

आइतबार, १६ साउन २०७३

July. 31 Sunday, 2016

PRADES

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाढ, रिसिन्न रानीपोखरी, माफ्कोट, काँतदरवार, जामुने, भञ्ज्याङ, काँहु शिवपुर, सावुङ्ग भगवतीपुर गा.वि.स. हरू र व्यास नगरपालिका क्षेत्रमा बसोबास गर्ने स्थानिय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौं।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय

काँहुशिवपुर-१ भापुटार, तनहुँ

समय : बिहान १०:३० बजे

आयोजक



वातावरण तथा सामाजिक अध्ययन विभाग

नेपाल विद्युत प्राधिकरण खरिपाटी, भक्तपुर



वर्ष ११ अंक १३, २०७३ श्रावण १६ गते आइतबार, नेपाल सम्मत ११३६ LOKWANI DAILY Sunday 31,

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तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुनः वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुभाबको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाङ, रिसिङ्ग रानीपोखरी, माभुकोट, कोतदरवार, जामुने भञ्ज्याङ्ग, काहुँशिवपुर, सावुङ्ग भगवतीपुर गाविसहरू र व्यास नगरपालिका क्षेत्रमा बसोबास गर्ने स्थानीय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुभाब दिनु हुन हार्दिक आमन्त्रण गर्दछौ।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय, काहुँशिवपुर-१ भापुटार, तनहुँ

समय : विहान १०:३० बजे

आयोजक

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MADISETI PRAWAHA NATIONAL DAILY

वर्ष ६ अंक १६ आइतवार, १६ साउन २०७३ July. 31 Sunday, 2016 MAD

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक ज्ञातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाड, रिसिङ्ग रानीपोखरी, माफ्कोट, कोतदरवार, जामुने भञ्ज्याङ्ग, काँहु शिवपुर, सावुङ्ग भगवतीपुर गा.वि.स. हरू र व्यास नगरपालिका क्षेत्रमा बसोबास गर्ने स्थानिय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौ ।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय

काँहुशिवपुर-१ फाँपुटार, तनहुँ

समय : विहान १०:३० बजे

आयोजक



वातावरण तथा सामाजिक अध्ययन विभाग

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१० अंक १३९ तनहुँ १६ माउन २०७३ आइनबार SETIMADI, National Daily Sunday 31 Jul

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना :

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुझावको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाङ्ग, रिसिङ्ग रानीपोखरी, माझकोट, कोटदरवार, जामुने भञ्ज्याङ्ग, काँहु शिवपुर, सावुङ्ग भगवतीपुर गा.वि.स. हरु र व्यास नगरपालिका क्षेत्रमा बसोवास गर्ने स्थानीय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुझाव दिनु हुन हार्दिक आमन्त्रण गर्दछौ ।

तपशिल :

मिति : २०७३ साल श्रावण १७ गते, सोमबार

स्थान : श्री शुक्ला माध्यमिक विद्यालय

काँहुशिवपुर -१ भापुटार, तनहुँ

समय : बिहान १०:३० बजे



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सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुर्क वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुभाबको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छड, रिसिङ्ग रानीपोखरी, माभुकोट, कोतदरवार, जामुने भञ्ज्याङ्ग, काहुँशिवपुर, सावुङ्ग भगवतीपुर गाविसहरू र व्यास नगरपालिका क्षेत्रमा बसोवास गर्ने स्थानीय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुभाब दिनु हुन हार्दिक आमन्त्रण गर्दछौ।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय, काहुँशिवपुर-१ भापुटार, तनहुँ

समय : विहान १०:३० बजे

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वातावरण तथा सामाजिक अध्ययन विभाग

नेपाल विद्युत प्राधिकरण

खरिपाटी, भक्तपुर



Monday, Aug. 1, 2016

स्वतन्त्र, निर्भिक, निष्पक्ष एवं खोजमूलक पत्रकारिताका लागि

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मादीसेती प्रवाह

राष्ट्रिय दैनिक

MADISETI PRAWAHA NATIONAL DAILY

सार्वजनिक सुनुवाई कार्यक्रम सम्बन्धि सूचना

तनहुँ हाइड्रोपावर लिमिटेडद्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको पुरक वातावरणीय प्रभाव मूल्याङ्कन (Supplementary Environmental Impact Assessment) मस्यौदा प्रतिवेदन सम्बन्धमा राय सुभाबको लागि निम्न मिति, स्थान र समयमा आयोजना हुन लागेको सार्वजनिक सुनुवाई कार्यक्रममा आयोजना क्षेत्र तनहुँ जिल्ला स्थित भिमाद, छाङ, रिसिङ्ग रानीपोखरी, माभुकोट, कोतदरवार, जामुने भञ्ज्याङ, काँहु शिवपुर, सावुङ्ग भगवतीपुर गा.वि.स. हरू र व्यास नगरपालिका क्षेत्रमा बसोबास गर्ने स्थानिय सर्वसाधारण, सरोकारवाला, सबै राजनीतिक दलका प्रतिनिधिहरूलाई निम्न स्थान र समयमा उपस्थित भई आफ्नो अमूल्य राय-सुभाब दिनु हुन हार्दिक आमन्त्रण गर्दछौं।

मिति : २०७३ साल श्रावण १७ गते, सोमवार

स्थान : श्री शुक्ला माध्यमिक विद्यालय
काँहुशिवपुर-१ भुपुटार, तनहुँ

समय : विहान १०:३० बजे

आयोजक



वातावरण तथा सामाजिक अध्ययन विभाग

नेपाल विद्युत प्राधिकरण

खरिपाटी, भक्तपुर



গণ মঞ্চ

পত্রিকা

গণ মঞ্চ



Appendix C-II

List of Participants

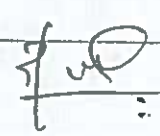
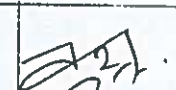
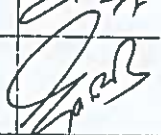
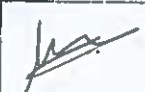





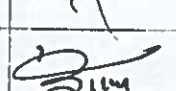
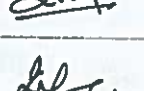
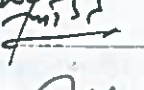


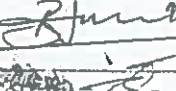



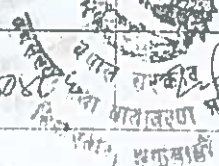


हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित
तनहुँ जलविद्युत् आयोजनाको
पुरक वातावरणीय प्रभाव मूल्याङ्कन सम्बन्धी
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उपस्थिती

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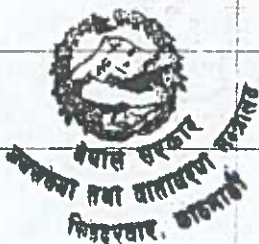
क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
१.	दीपक सुवेदी	जिल्ला प्रशासन कार्यालय	प्र. वि. क.	९८५६०६७७७७	
२	कुश व थापा	काँडाखिबपुर-१	वि. वि. क.	९८४६१२९८६८	
३.	दुधरे दत्त पनेरु	जयपुरको तमा चक्रवर्ती मन्त्रालय	मानव अधिकार	९८५१३३६०८७	
४.	हेमक राज चिमरे	विद्युत विकास विभाग	वातावरण विभाग	९८५९२२५०६२	
५.	सविना खड्का	काँडा मन्त्रालय	टी. पी. राजनीति	९८५१७२५५२५	
६	कृष्ण प्रसाद पौडेल	राष्ट्रिय प्रशासन	आयोजना	९८४६४८६२३६	
७.	कुमार दत्त पौडेल	जो. वि. क. विभाग	व. वि. क.	९८५९०३०६९०	
८.	तारा राज रावा	गोपाली भण्डारी		९८४६४८६२३६	
९	सोम प्रसाद नेपाल	तनहुँ ज. वि. आ.	सह निर्देशक	९८२९९८३०६०	
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१४	भुवन सिंह थापा	काँडा-२	राष्ट्रिय जनमुक्ति पार्टी तनहुँ	९८०२६३३३३६	
१५	चुडामा मगर	काँडा-२	राष्ट्रिय जनमुक्ति पार्टी तनहुँ	९८४६४८६२३६	
१६	चरित्र कार्की	काँडा-२	राष्ट्रिय जनमुक्ति पार्टी तनहुँ	९८४६४८६२३६	



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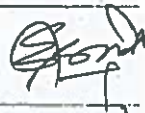

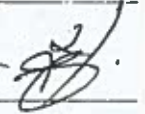
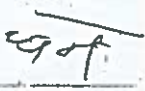
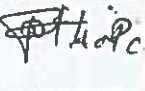




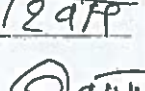

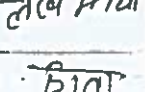

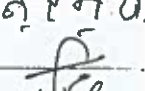
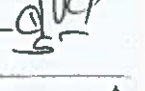

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
१८	डेन बस्न्याल रावल	मि. कुमा लम्बु	५८१ मि. वि. प्र. ३५	९८२१११४५९	A
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२०	दुर्कमान कोइराला	ब्यास १०	अध्यक्ष (न. क. मा. क.) मा. क. मा. क.	९८१३५५८५१२	इ. प्र. म. ड. ५
२१	प्रेमालाल लामा	ब्यास १२	अध्यक्ष (न. क. मा. क.) मा. क. मा. क.	९८४५०४०३०८	गो. म. ड.
२२	दिपक महर्पात्रे	ब्यास - २	अध्यक्ष लो. क. मा. क. मा. क.	९८४६९०६०६	डि. क.
२३	जगन्नाथ खनाल	ब्यास - ११	मै. क. मा. क. मा. क. (मा. क. मा. क.)	९८४५०२७९०८	ज. क. मा. क.
२४	गोविन्द राज पाले	मि. क. मा. क. मा. क.	मि. क. मा. क. मा. क.	९८४५०८६४०८	डि.
२५	कुमार गोरे	मै. क. मा. क. मा. क.	मै. क. मा. क. मा. क.	९८४६०९०७१६	इ. प्र. म. ड. ५
२६	प्रमेश बिष्ट	का. लक्ष्मि वल्लभ	मा. क. मा. क. मा. क.	९८४९२४२४५९	मा. क.
२७	अमित चौडेल	मै. क. मा. क. मा. क.	मै. क. मा. क. मा. क.	९८४५०९५९५२	मा. क.
२८	दीपक खोच	मै. क. मा. क. मा. क.	..	९८५११६८०७६	इ. प्र. म. ड. ५
२९	सुभाष खोच	९८४५०९८६२५	मा. क.



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मिति ०६३/४/१६

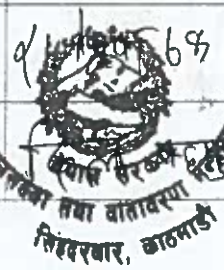
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३०.	इन्द्र बहादुर खाले	कोटेश्वर	शिक्षण	९८५६०६०६१०	
३१.	राम चामा	ज्याम-६	शिक्षण	९८५६०६५०५५	
३२.	श्री श्री १९	जी २५५/८-७	विद्युत	९८५६०६५०५५	
३३.	चण्डिका लामा	हाथुला	कर्मचारी		
३४.	पद्म लामा	चौवल १	—	—	
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३६.	बालकृष्ण लामा	"	"	"	
३७.	गुण लामा	ताप्लेजुङ ५०	शिक्षण	—	
३८.	शिव लामा	"	"	—	
३९.	चण्डिका लामा	हाथुला १	—	—	
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४१.	गिता लामा	"	"	९८१६१६५६५६	
४२.	लालिका लामा	हाथुला ६	—	—	
४३.	पुष्पा लामा	हाथुला ६	—	—	
४४.	दया लामा	पोखरा ५१५० ९	—	—	
४५.	कटु लामा	हाथुला ९	—	—	



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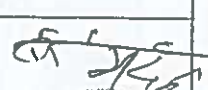


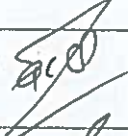
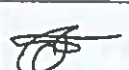
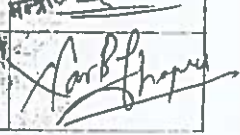
मिति ०६/०४/१७

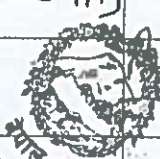
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४५	उदय कृष्ण गौह	रानी पोखरी-५	कृषी		डा. ५
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४७	प्रेम वहादुर शर्मा	काँडे खोलापट्टा	बिद्युत	९८४३०९४४३	सु. २
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५०	दिल माया राना	काँडे खोलापट्टा-६	कृषि		
५१	लाल माया राना	काँडे खोलापट्टा-२	कृषि		लालमाया
५२	बैकुण्ठ लाल गौह	श्रीसिद्धोपायन	कृषी		बैकुण्ठ लाल
५३	केश कुमारी	पल्लुगड-			केशकुंश
५४	होम च. शर्मा	रानी पोखरी-५	कृषि		होम च. शर्मा
५५	मित्र सि. थापा	रानी पोखरी-७	कृषि		मित्र सि.
५६	जि. वं. कट्टे	काँडे खोलापट्टा	ब्यापार		जि. वं.
५७	राम च. हाडुरा	हाडुरा-८	कृषि		राम च.
५८	पद्म च. लाल	काँडे खोलापट्टा	कृषि	९८२३१३५०२०	पद्म च.
५९	पद्म च. लाल	रानी पोखरी-६	कृषि		पद्म च.
६०	मित्र सि. थापा	मोटरपट्टा-७	खिरी	९८०८६२४०६४	मित्र सि.



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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
६६२	वम.वा. थापा	ज्यामुजे - १	कृषक		
६६३	रमेश.सि. खड्गेली	काँडाविचुर - ३	कृषक		
६६४	बाबुराम डाले	॥ ॥	॥ ॥		बाबुराम डाले
६६५	श्री.वा.				
६६६	कमली डाले	मिलीट.पाटा	कृषक		
६६७	रुकुमा ओली	धवला - १	कृषक		रु
६६८	रेखा राम थापा	चपथी - १/३	कृषक	९८८९८८९९	रेखा राम
६६९	लेखराज गौरी	रेखा - ३	घाटे		लेखराज
६७०	तेज बहादुर थापा	रेखा, टुनीपोखरी	कृषी	८९९९९९९९९	तेज बहादुर
६७१	बाबुराम थापा	॥ ॥	कृषि	९८८८८८८८८८	
६७२	गोविन्द थापा	॥ ॥ - ३	॥	९८५६०६३५७५	गोविन्द
६७३	तिलक थापा				
६७४	गणेशमान जोशी	॥ ॥	कृषि	९८०६६६५११९	गणेश
६७५	देउदत्त	भुडावा			देउदत्त
६७६	कौशिक ११२	रेखा, फारन	॥		
६७७	तेज बहादुर थापा	रेखा, फारन	॥		


 नेपाल सरकार
 पर्यावरण तथा जल विभाग
 काठमाडौं

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तनहुँ जलविद्युत् आयोजनाको
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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
७८	दिपा राना झाट	०५।स-७		९८१९।८७२७५	दिपा
७९	२०० माया थापा	०५।स-७	कि.म.का	९८०२२०६८ ६६	२००
८०	पद्मा झोले	१)		९८४६०९० ९४३	पद्मा
८१	पार्वती गिरी	१)		९८४६०९६२६	पार्वती
८२	लोक वीरथापा	काँडादिग ८	पलामवार	९८५४५४४४६	लोक
८३	गो.भा.प. प्रो.०	छाङ्गु ४	किस	९८४६३४४६६	गो.भा.प.
८४	कृष्ण चौधरी	दमौली	पत्रकार	९८५३०३०५४	कृष्ण
८५	भी.हरि पौडेल	दमौली	पत्रकार	९८५३०९००३८	भी.हरि
८६	रा.प्र. पौडेल	रा.प्र. पौडेल	कृषी	९८०५६५६२२५	रा.प्र.
८७	रि.टि.सि.सि.	बा.पा.	कृषी		रि.टि.सि.सि.
९०	सिमा थापा	रानीपैखरी	कृषी	—	सिमा
९१	दान व. थापा	रानीपैखरी-९	१	९८२४१३५७५	दान
९२	सुन्दर थापा थापा	— ५ —	— ५ —		सुन्दर
९३	लिलि हा.प. थापा	— ५ —	— ५ —		लिलि
९४	मालि थापा थापा	रानीपैखरी ८	— ५ —		मालि
९५	हिलि हा.प. थापा	— ५ —	— ५ —		हिलि



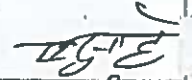
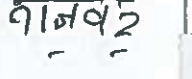
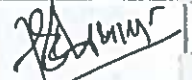
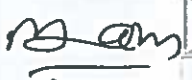

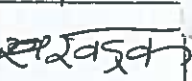


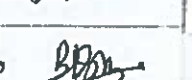
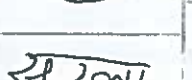

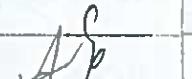

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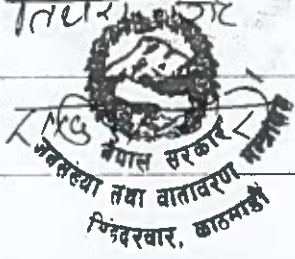
मिति ०६/३१/१६

क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
९६	Chandra Bdr Rambahat	वगस-१	जोगीरि	९८४१८६६५५०	Jan
९६	Bimal Rambahat	वगस-१	Student	९८४६६०००७६	Bimal
९७	बालकृष्ण गौड	गामकोट बुङ्गा	कृषि	९७४६०१६३३९	बालकृष्ण
९९	होरे राम गौड	बानीपोखरी ९	॥	९७४६०९६६८९	होरे
१००	भनिपुर गौड	" "	"	९७४६०३८५६३	भनिपुर
१०१	रामजी गौड	" "	"	९८४३९३६८०९	रामजी
१०२	रेवडी माया	गुलसी			रेवडी माया
१०३	केशव मास्की	पोखरी-१०	"	९८४६०५६४४५	केशव
१०४	बडी नाथ गौड	बानीपोखरी ९	कृषि	९७४६०१५३३९	बडी नाथ
१०५	अमृत थापा	बानीपोखरी-६	कृषि	९८४५१०२३३३	अमृत
१०६	सुर्ज कुमारी	पट्टाचङ्गा			
१०७	इन्द्रिय प्रसाद	वगस १	X	९८४६०७३६११	इन्द्रिय
१०८	राज चन्द कसु	वगस १		९८४६०३०२७२	राज
१०९	केशव कसु	वगस १०	कृषि	९८४६०३०२७२	केशव
११०	अमकुमारी	हलीगंटी ६	"		अमकुमारी
१११	हेम कसु	हलीगंटी ६	होली	९८४६०३०२७२	हेम

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
११२	सितार खाल	कास् ९	सामुदायिक	९८६०९१०६६	
११३	प्रकाश भाले	कास् १३ धुप	गृह	९८६०९३०६८	
११४	सुन्दर खाल	गनाई च	—	—	
११५	गणेश खाले	कास् ८	गृह	—	
११६	रमेश राम थापा	फोटफरबा ६	"	९८९००८०६४६	
११७	प्रदेश थापा	" - "	"	९८१९११२१०२	
११८	केशव गगर	गुणादी	कृषि	९८८६६५६६४६	
११९	रमेश खाले	कास्	गृह		
१२०	सुर्ज	कास् ११/३	कृषि	९८२३५८००५९	
१२१	नरेश थापा	कास् १३	कृषि	९८२५१९८६०	
१२२	विष्णु खोटा	कास् १३	कृषि	९८२३५१६६३६	
१२३	सुर्ज खोटा	"	कृषि		
१२४	राधाका खोटा	"	कृषि		
१२५	जित बा	"			
१२६	निर्धारा खोटा	"	कृषि	९८४६३९८६०६	
१२७	रमेश खोटा	कास् ९	"	—	



पिप्लेखार, काठमाडौं



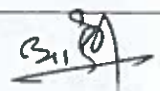
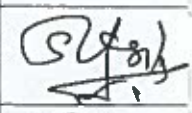


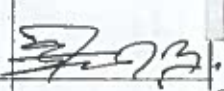

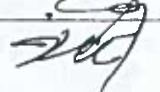

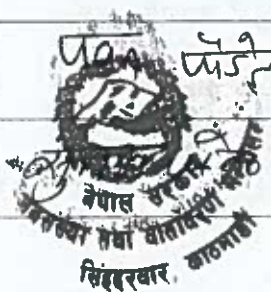
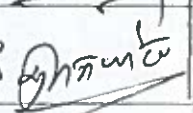
हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित
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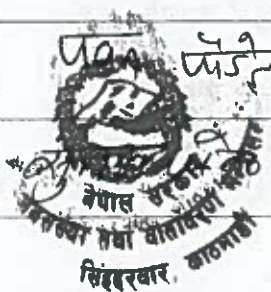
मिति ०६/०४/१६

क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
१२८	धाममाया रानामाया	काई व		९८०६७६९३३	धाममाया
१२९	रेश्वरिनामाया	काहुसिवपुर-१		९८४६७८७१९४	रेश्वर
१३०	अनादेवी थापा	" "		९८४६०९३०८५	अना
१३१	सितामाया कथाल	" "		९८४६२७५१५१	सिता
१३२	तिर्धमाया रानामाया	" "		९८१७१०८२७०	<u>तिर्धमा</u>
१३३	मेनका				
१३४	सानु चौधरी	कथाल-६		९८४६०९२७९८	सानु
१३५	दुर्गा पन्त	" "		९८१०००७२६४	दुर्गा
१३६	महिकमा थापा	" "		९८४६०६५१३५	महिकमा
१३७	रुद्रमाया थापा	" "		९८६६००००९१	रुद्र
१३८	उषा क्षेत्री	" "	शिक्षक	९८४६६१०६०५	उषा
१३९	शेर व. थापा	काहुसिवपुर	पल्लवा	९८१६६२०९५४	<u>शेर</u>
१४०	श्री भक्त चौधरी	रानीपोखरी र	कृषक	९८४६४५९१६८	श्री
१४१	सुनील राय	कथाल व ००२१०१ पत्रकार		९८४६४५९१६८	सुनील
१४२	कृष्ण/पन्त	रानीपोखरी	कृषक	९८४६४५९१६४	कृष्ण
१४३	विष्णु क. थापा	रानीपोखरी	कृषक	९८२६१२९२२	विष्णु

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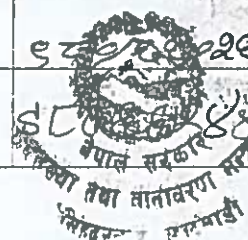
क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
१४४	वि. सु. १० काया	कटु खिचुरा	कृषि		
१४५	हनुमान् मन्दिर	व्याप - ७	"		
१४६	आ. २ ले लि नेपाली	व्याप ६	व्यावसाय		
१४७	मे. ७ काया	कटु खिचुरा पहाल			
१४८	दुल्ल राय/जोरा	रानी पोखरी	क्रिसक	९८०६६८९ २०८	
१४९	ज. ३ भया	"	"		
१५०	टिका का. ६/७८	पोखरी - ६		९८०४/४९/२०	
१५१	माया शताश्रय	कटु-खिचुरा-१	कृषि		माया
१५२	जोवरधन थापा	कटु-खिचुरा-२	कृषि	९८८६६८६३७	जोवरधन
१५३	वीर वहाभाभा	कोरदावा-६	बि. ५/३	९८९९९४८६६	
१५४	प. ३/२/१५	व्याप-६ प. २०	"	९८४३०६६२६९	
१५५	गजवीरम आश्रय	व्याप - ६ प. २०	व्यापार	९८९७९२४६२८	
१५६	होमव. शताश्रय	व्याप जामुने ४.	कृषि		
१५७	अ. ३ का. ६/७८				
१५८	प. ३/२/१५	व्याप-६	प. २०	९८२३०२३५६	Pawar
१५९		व्याप-१० ठेगाने	बि. ५/३	९८४६०३०६८९	



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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
१६०	सुमान सिंह थापा	ब्यास - १		९८४६०९१३१२	
१६१	बुद्धि व. थापा	कोट इश्वर	किसान	९८१५१५३३१	
१६२	वलराम ग्राहिली	ग्राहिली - ९	शिक्षक	९८४३९४६२२६	
१६३	लाला का अर्का गाला २		प्रा.क		
१६४	गिरि व. थापा, काहुँ १			९८०६७३९८१८	
१६५	मन व. थापा, भिडाँट			९८०५८९५१५१	
१६६	अर्का व. थापा, गेमाङ			९८४६०६०८४५	
१६७	जोडे आले	केडुवा १		९८०५१२६२६६	जोडे आले
१६८	नाबिम ग्राहिली रामेपोखरी-५		होमि	९८४६१५२९०	
१६९	दिलिप कार्की रामेपोखरी-५		"		दिलिप कार्की
१७०	सी गेमाङ	गापुरा १	कृषि	९८१९१२३५६	
१७१	मित्र व. थापा	गापुरा	होमि	केन	
१७२	बाल व. दिला	दिवाङ १	अध्यापक		यम व
१७३	नारायण राजा भार	गामुने - ४		९८५३२९१३७१	
१७४	देव व. रोक्या	ब्यास ६	फार्मीन	९८४६०९२६५६	देव
१७५	गाम्भीर थापा	काहुँ खिवा-१	किसान	९८४६०९२६५६	



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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
१७६	जनता मागौली	राष्ट्रिय जनमुक्ति पार्टी लोकलिक	अध्यक्ष	९८४६३०५५	जनता मागौली
१७७	दिपक महाराइ	लोकतान्त्रीक मोर्चा	अध्यक्ष	९८४६९०६०६	दिपक महाराइ
१७८	हर्कमान शर्मा	सदमानता पार्टी	अध्यक्ष	९८९३४५५९९२	हर्कमान शर्मा
१७९	सुभाष पन्थ	गोरे का १५	विद्यार्थी	९८४०५०३४३	सुभाष पन्थ
१८०	संजय थापा	धाम नपा-११	विद्यार्थी	९८०३४५५९२	संजय थापा
१८१	रूपराज पाण्डे	काँडे शिवपुर	अध्यक्ष	९८१६२०४१	रूपराज पाण्डे
१८२	चित्त क अले	काँडे शिवपुर - १	काँडे शिवपुर	९८०६५४०५४	चित्त क अले
१८३	जगन्नाथ शर्मा	धाम - ११	मोर्चा माओवादी	९८५६०२७१०६	जगन्नाथ शर्मा
१८४	रमेश शर्मा	धाम - २ र.स.पा.	अध्यक्ष	९८४०४०३०६	रमेश शर्मा
१८५	जय क. शर्मा	काँडे शिवपुर	विद्यार्थी	९८०६४११६३५	जय क. शर्मा
१८६	क. व. थापा	बिसिङ्ग १.	कृषक		क. व. थापा
१८७	धन कुमारी थापा	काँडे शिवपुर १	कृषि.	९८५६०६०८६४	धन कुमारी थापा
१८८	अणु डाँडा	धाम २	निर्माण	९८४६९५५६६	अणु डाँडा
१८९	विजय शर्मा	जामुने - २	कृषक		विजय शर्मा
१९०	गंगा देवी शर्मा	जामुने ४	कृषक	९८५१५४३३७५	गंगा देवी शर्मा
१९१	जो. शर्मा	जामुने - ४	१/१		जो. शर्मा

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
१९२	लोक बा. थापा	जामुने - ५	कृषि		
१९३	सोद्विष थापा	पुर्जा ३	कृषि		
१९४	सम्भरवा. रमाशर	जामुने - ४	कृषि		
१९५	लाल थापा मगर	बारा - ६	कृषि		
१९६	श्री वहादुर माल				
१९७	श्रीमता के. वहादुर	वहादुर १०	कृषि	९८७६१९५५	
१९८	पद्म राजधिमिरे	जामुने ८	कृषि		
१९९	गीता शर्मा	रिमिरे, पारुवा पारुवा माल	कृषि	९८७६१९५५ ९८७६१९५५	
२००	सारदा रिपारी	रिमिरे	कृषि		
२०१	विष्णु शर्मा कुवेदी	भिमदे - ९	कृषि	९८७६१९५५	
२०२	प्रेम शर्मा	बारा	कृषि	९८७६१९५५	
२०३	सुना माल	काठुबिपुर - ९			
२०४	सुना थापा				
२०५	जमान शर्मा	काठुबिपुर	कृषि	९८७६१९५५	
२०६	मन शर्मा	भिमदे			
२०७	द्वैपाय थापा मगर	काठुबिपुर - ९	व्यापार	९८७६१९५५	
२०८	यश वहादुर माल	११ - ८	कृषि	९८७६१९५५	

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२०९	मि. लाल बहादुर शाही	म. १/२	कृषि		मि. लाल बहादुर शाही
२१०	दिलाल लाल	शिवपुर-९	कृषि		
२११	गुन्दी शाही	जामुने-५	कृषि		
२१२	अनन्त शाही	जामुने-५	कृषि		अनन्त
२१३	त्रेविशाल शाही	जामुने-५	विद्यार्थी		त्रेविशाल
२१४	मि. शाही	पाल	कृषि		मि. शाही
२१५	जुना शाही	रिसिङ्ग, पाटन	कृषि		
२१६	शक्ति शाही	काहुँ शिवपुर-१	विद्यार्थी	९८२५१११५५९	शक्ति
२१७	दलज शाही	तडु खोला-५	कृषि	९८७९८९५५५५	दलज
२१८	दिल्ली शाही	तडु, कोटदुम	कृषि		दिल्ली
२१९	दान बहादुर	कोटदुम	कृषि	९८१७१७६८०८	दान
२२०	केश व. बिलामी	कोटदुम-१	कृषि	९८९६९८९९९८	केश
२२१	सप्तक. बिलामी	रिसिङ्ग, पाटन	कृषि	९८९६९८९९९८	सप्तक
२२२	रिसिङ्ग	दाङ्ग-६	"	२९१८९९९९९९	रिसिङ्ग
२२३	रिसिङ्ग	दाङ्ग-६	"		
२२४	दाङ्ग	दाङ्ग-२	"	९८०६८८९९९९९	दाङ्ग

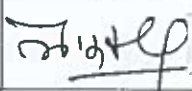
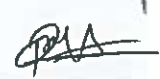


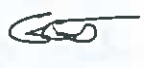

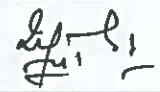
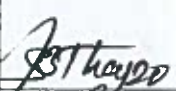
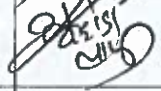
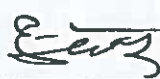
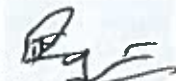



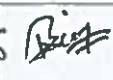
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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२२५	मोहन लाल बिस्मि	जामुने २	कृषी	९८९६९८६०६६	मोहन ब. बिस्मि
२२६	वत्स लाल बिस्मि	आपुटा	कृषी	९८५१०९५३८६	वत्स लाल बिस्मि
२२७	नरवहादुर शर्मा	जे. का. पा. (माले)	लान्डे विकास	९८५६२५७२२५	नरवहादुर शर्मा
२२८	म. र. २१०० शेख	कोटहरा	व्यापार		
२२९	हेल वहादुर	आपुटा	कृषी	९८५६०५३३६२	हेल वहादुर
२३०	बल ब. वाचै	आपुटा	कृषी	९८०५८७४६१०	बल ब. वाचै
२३१	विपिन शर्मा	आपुटा	कृषी	९८०६६३८३९६	विपिन शर्मा
२३२	दिवा. वि. धाम	आपुटा	-	९८५६०६०८८६	दिवा. वि. धाम
२३३	पवित्रा पौडेल	काटारि वि. पु.	समाजसेवी	९८५६०२५५६	पवित्रा पौडेल
२३४	उद. उ. शर्मा	आपुटा	समाजसेवी	९८५६०२५५६	उद. उ. शर्मा
२३५	महादेव परियार	समुद्रगढी	कृषी	९८०६६३९६६	महादेव परियार
२३६	योग जलद्वारा	समुद्रगढी	कृषि	९८०६६९२६६	योग जलद्वारा
२३७	रेल लाल परियार	समुद्रगढी	कृषि	९८९८९८९६६३	रेल लाल परियार
२३८	सोम बहादुर	समुद्रगढी	कृषि	९८२३५९५५४२	सोम बहादुर
२३९	भुवन बि. पापा	कोटहरा-३	कृषि	९८३९३९३२	भुवन बि. पापा
२४०	विमल शर्मा	कोटहरा-३	कृषि	९८०५१७०७७७	विमल शर्मा

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२४१	लोक उ. थापा	भापुरा	कृषि.	x.	
२४२	कृष्ण शमि थापा	भापुरा	हृ. वि.	९८५६११६०९०	
२४३	मान व. धुवाँ	भापुरा	सि.	९८०६६४६९०	
२४४	कागत व. मगर	वेतेनी आस-प.	कृषक		५११११
२४५	दिनेश लामिछाने	भापुरा-५ पाटन	-	९८४६३३८२६८	
२४६	सुन व. डाँले	भापुरा-६ वेतेनी	कृषक	९८२८५६६२८३	
२४७	राजवर्ण ज्ञेरी	भापुरा-५ पाटन		९८६६०३०५५२	
२४८	राजचन्द्र पोखरेल	गा. वि. प. वि. वि. / मन्थली काँडे वि. वि. गा. वि. प.		९८६६०३२२४६	
२४९	शिर व. मगर	काँडे वि. वि.	कृषि	९८१९१५६५	
२५०	शिव व. थापा	काँडे वि. वि.	विद्यार्थी	९८४६५४९५३९	
२५१	सुन व. थापा	...	कृषि		
२५२	सुन व. थापा	काँडे वि. वि.	कृषि		
२५३	सुन व. थापा	
२५४	सुन व. थापा	काँडे वि. वि.	...	९८०५१४८४४०	
२५५	सुन व. थापा	काँडे वि. वि.	...		
२५६	सुन व. थापा	काँडे वि. वि.	...	९८५८५९८५३६	



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२५७	बैजु बाराहनाथ झापा	झापा	झापा	९८६६६६६६६६	
२५८	देउ बहाल झापा काहुँ	झापा	झापा	९८६६६६६६६६	
२५९	मेर १४ झापा	झापा	झापा	-	
२६०	शीलाकाजी	झापा ७	झापा	-	मी. न.
२६१	मिन. क. थापा	झापा ७	झापा	९८६६६६६६६६	
२६२	मी. क. थापा	झापा ११	झापा	-	
२६३	मु. राम झापा	झापा २	झापा	९८६६६६६६६६	
२६४	नारायण झापा	झापा ५	झापा	९८६६६६६६६६	
२६५	क. ल. १४ झापा	झापा २	झापा	-	
२६६	ब. ल. १४ झापा	झापा २	झापा	-	
२६७	ब. ल. १४ झापा	झापा २	झापा	-	
२६८	झापा १४ झापा	झापा २	झापा	-	
२६९	झापा १४ झापा	झापा २	झापा	-	
२७०	झापा १४ झापा	झापा २	झापा	९८६६६६६६६६	
२७१	झापा १४ झापा	झापा २	झापा	९८६६६६६६६६	
२७२	झापा १४ झापा	झापा २	झापा	९८६६६६६६६६	

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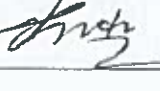

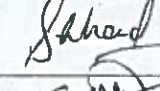
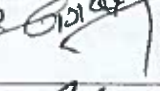

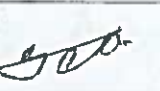

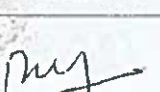

क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२७३	रोल्पा चापा	ठेगाना १	कृषि	९८४६०५५९९९	
२७४	राज राज चापा	ठेगाना ६	कृषि	९८४६४१५९९८	
२७५	महाज लेवा	ठेगाना ६	महाज लेवा (महानुल्लेख)	७८०५८१४३१३	
२७६	महाज लेवा	ठेगाना ६	कृषि	९८०५८३३९	
२७७	महाज लेवा	ठेगाना ६	कृषि	९८४६७३०९०९	
२७८	महाज लेवा	१, १	१, १	मिता	मिता
२७९	महाज लेवा	१, १	१, १		मिता
२८०	महाज लेवा	१, १	१, १	९८४६६५२९५५	
२८१	महाज लेवा	१, १	१, १	९८४६६५२९५५	मिता
२८२	महाज लेवा	१, १	१, १		मिता
२८३	महाज लेवा	१, १	महाज लेवा		
२८४	महाज लेवा	महाज लेवा १	महाज लेवा	९८४६०५२९५५	
२८५	महाज लेवा	महाज लेवा १	महाज लेवा	९८४६०५२९५५	
२८६	महाज लेवा	महाज लेवा २	महाज लेवा	९८४६०५२९५५	
२८७	महाज लेवा	महाज लेवा २	महाज लेवा	९८४६०५२९५५	
२८८	महाज लेवा	महाज लेवा २	महाज लेवा	९८४६०५२९५५	



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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२८९	लिर गौरी	हनुमान् ४	कृषि	९८४९२९३५०	
२९०	प्रेम थापा	तनहुँ हाइड्रोपावर	इन्जिनियर	९८४४२४४४४	
२९१	गणेश थापा	पाटन गाउँ ६	कृषि	९८५९२९९०८	
२९२	लिर गौरी	काठमाडौं	विद्यार्थी	९८२२९०६९८९	२५/१६/९२
२९३	काठ गौरी	काठमाडौं	विद्यार्थी	.	२५/१६/९२
२९४	हिमा माया	धारा ११	-	९८५१९५२३९	
२९५	हल वन नेपाली	काठमाडौं-१ काठमाडौं	शि.हा.क	९८४९२६२५२९	
२९६	निष्कु शर्मा	धारा-५ काठमाडौं	पञ्चायत	९८५९०-३२८०	
२९७	पद्म थापा	काठमाडौं १	.	९८१६१७३१९५	
२९८	पद्म खत्री	काठमाडौं शिवपुर १	.	९८१३९६७८९७	
२९९	गंगा दत्त भण्डारी	काठमाडौं शिवपुर १	होटल	९८४९०९४९९०	
३००	सत ब. थापा	काठमाडौं २	पञ्चायत	९८४६०९३४४३	
३०१	गुरु व. शर्मा	फोटो ट्याक्टर	भैरव नगर	९८४६६१०७२६	
३०२	लिर गौरी	काठमाडौं १	विद्यार्थी	.	
३०३	लिर गौरी	काठमाडौं १	विद्यार्थी	.	
३०४	मिना थापा	काठमाडौं १	विद्यार्थी	९८४६१३१०७२	

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२०५	सिंह व. वि. शाखा	काठमाडौं	सिंह	९८६२४३२६२	-संलग्न
२०६	गुन सिंह थापा	धनकुटा-२	"	९८०२८६९६९५	Shuman
२०७	मिर्जा व. शाखा	धनकुटा १	"	९८४७५३७७००	M. M.
२०८	वेमि व. शाखा	धनकुटा ६	"	९८४६९३१९२०	वेमि
२०९	उमकान्त पौडेल	कैलाली ज. वि. शाखा, ज. वि. शाखा	ज. वि. शाखा	९८४२०५०५	उमकान्त
२१०	चन्द्र लक्ष्मी पौडेल	सुदूरपश्चिम प्रदेश, काठमाडौं	गोपनीय	९८४३०२३०२४	चन्द्र
२११	ज. म. ल. शाखा	काठमाडौं	काठमाडौं	९८०८०४५२८९	ज. म. ल. शाखा
२१२	गुणाल थापा	काठमाडौं ६	मजदुर	९८०६६४३६६६	गुणाल
२१३	गुणाल व. शाखा	काठमाडौं २	सिंह	९८६६६०९८२९	गुणाल
२१४	र. म. ल. शाखा	काठमाडौं २	सिंह	..	र. म. ल. शाखा
२१५	गोपाल व. शाखा	काठमाडौं २	सिंह	..	गोपाल
२१६	गोपाल व. शाखा	काठमाडौं २	सिंह	९८०६६८२६९	गोपाल
२१७	गोपाल व. शाखा	काठमाडौं २	सिंह	९८६६६४३६६	गोपाल
२१८	गोपाल व. शाखा	काठमाडौं ६	सिंह	..	गोपाल
२१९	गोपाल व. शाखा	काठमाडौं ६	सिंह	९८६६६४३६६	गोपाल
२२०	गोपाल व. शाखा	काठमाडौं ६	सिंह	..	गोपाल

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
३२१	अनन्त ल थापा	लामुने १	किसान	९८९९९२८९९	राम थापा
३२२	कमल सिंह थापा	काहुँ शिवपुर - १	शिक्षक	९८८९०९३६९९	कमल सिंह
३२३	रोल्फ थापा	काहुँ शिवपुर - १	किसान	९८०६६२२०८	रोल्फ थापा
३२४	कृष्ण ल. थापा	काहुँ शिवपुर १.	व्यापारी	९८४६७४८९९६	कृष्ण ल. थापा
३२५	ओम का. रान्धेरा	जाहुने ४	कृषी	९८४६०६२२६४	ओम का. रान्धेरा
३२६	नारायण प्रसाद	काहुँ शिवपुर १	गृहरी	९८८६३६६९९२	नारायण प्रसाद
३२७	वेणु वा. थापा	कोठकार	विद्यार्थी	९८४६३६६९९२	वेणु वा. थापा
३२८	दलसरा थापा	काहुँ शिवपुर १	कृषि	९८८४६९६३६६०	दलसरा थापा
३२९	दलसरा थापा	काहुँ शिवपुर १	कृषि	९८४६३७२९९२	दलसरा थापा
३३०	गुमार थापा	दमौली	विद्यार्थी	९८०२९८६९९६	गुमार थापा
३३१	वीर बहादुर थापा	लामुने	कृषी	९८४६०६३२६६	वीर बहादुर थापा
३३२	सुनिल थापा	चप्रे	कृषि	९८४६१०८९९६	सुनिल थापा
३३३	बिनय थापा	चप्रे ६	कृषी		बिनय थापा
३३४	विश्व थापा	चप्रे १	विद्यार्थी		विश्व थापा
३३५	सविता थापा	चप्रे - २	विद्यार्थी		Sabina
३३६	रामन थापा	काहुँ शिवपुर	कृषि	९८४६३८९९२३	रामन थापा

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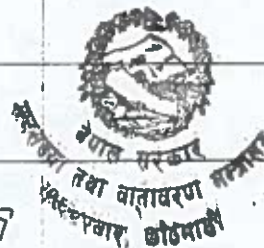
क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ता
३४७	जिन क बाडा	साप्ले ३	शिखर	९८२३०२०५१७	+
३४८	कैलाश शर्मा	साप्ले ३	शिखर	९८२६१४२५००	+
३४९	वाक्नुनाम शर्मा	साप्ले-१२	शिखर	-	शिखर
३५०	फल व थापा	काहुँखिपुर्-८	- ११ -	९८०५५७६६५२	शिखर
३५१	शिखर शर्मा	साप्ले २	शिखर	९८४६०९१३०८८	विष्णु
३५२	दिन प्र. थापा	साप्ले २	शिखर	९८२५१२९९८८	शिखर
३५३	शुद्धी माया थापा	साप्ले २	११.	९८०५८४७७७१	शिखर
३५४	शुद्धी थापा	साप्ले ७	११	९८१४१६८५६	शिखर
३५५	सैर बहादुर थापा	साप्ले ७	शिखर	९८४६५३७४८	शिखर
३५६	सुरेन्द्र थापा	साप्ले ७	शिखर	-	शिखर
३५७	शुद्धी थापा	साप्ले ७	शिखर	-	शिखर
३५८	शुद्धी थापा	साप्ले ७	शिखर	-	शिखर
३५९	शुद्धी थापा	साप्ले ७	शिखर	-	शिखर
३६०	शुद्धी थापा	साप्ले ७	शिखर	-	शिखर
३६१	शुद्धी थापा	साप्ले ७	शिखर	-	शिखर
३६२	शुद्धी थापा	साप्ले ७	शिखर	-	शिखर

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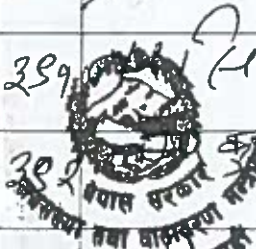
क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर.	हस्ताक्षर
३६३	हुमान लाल शर्मा	काँडा ७	मिथि		हुमान
३६४	सुनमया शर्मा	काँडा ६	मिथि		सुनम
३६५	पुष्पा शर्मा	चौक ५			पुष्पा
३६६	बिराट शर्मा	काँडा ६		९८६०६४९२	बिराट
३६७	रेखा शर्मा	काँडा ६			रेखा
३६८	विष्णु शर्मा	काँडा ६		९८५०००५०	विष्णु
३६९	सुलोचन शर्मा	काँडा ६	पुष्पा ९०	९८५००५०५२५	सुलोचन
३७०	दिनेश शर्मा	काँडा ९	-	=	दिनेश
३७१	दिनेश शर्मा	काँडा ९	-	-	-
३७२	मनमोहन शर्मा	काँडा ९	इन्जिनियर	९८५००५०५२५	मनमोहन
३७३	मोति शर्मा	काँडा ९	इन्जिनियर	९८५००५०५२५	मोति
३७४	विष्णु शर्मा	काँडा ९	-	-	विष्णु
३७५	नरेश शर्मा	काँडा ९	-	-	नरेश
३७६	सिमा शर्मा	काँडा ९	-	-	सिमा
३७७	हुमना शर्मा	काँडा ९	इन्जिनियर	-	हुमना
३७८	पुष्पा शर्मा	काँडा ८	इन्जिनियर	-	पुष्पा



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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
३७९	रामप्रसाद श्रेष्ठ	रानीपोखरी	कृषि		
३८०	गोविन्द शिवा	रानीपोखरी	कृषि	९८४६२९८-३९७	
३८१	बाबुकाजी श्रेष्ठ	रानीपोखरी	कृषि		बाबुकाजी
३८२	लाल को थापा	रानीपोखरी	कृषि		
३८३	शेर को थापा	—म— ८	—म—	९८९५९६६५	
३८४	प्रवेश थापा	नं ६	—म—	—	
३८५	सहाबि उरुङ	काहु शिवपुर ९	—म—	९८०६५३२५८	
३८६	हेमन्त कुमार थापा	३९२५(वा) २	"	९८२५९६९९५८	
३८७	रत्न बस्ने	"	कृषि		रत्न बस्ने
३८८	देव वराह	रानीपोखरी	"		
३८९	राम व. माथे	काहु शिवपुर ९	"	९८५६०५५८९०	
३९०	पुन वाना	०५/८ ९०	"		
३९१	सिद्धि	६.९, २	"	९८४१३१५५३०	
३९२	रत्न पोखरी	९ खिड्ग, क. वन	"	९८०६७५२६३०	
३९३	गोविन्द शिवा	रानीपोखरी	कृषि	९८५९०६९६३३	
३९४	ताम्र पति पन्थाल	रानीपोखरी		९८५६९३२६३०	ताम्र



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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
३३४	निल व. थापा	रानीपोखरी-७	कृषि	९४५६१७५०२१	निल
३३६	रेवली काले	मडुगुर ९	"	"	
३३७	दिलु थापा थापा	"	"	—	
३३८	पुन्य थापा	द्विगुर ९	—	—	
३३९	निल व. थापा	रानीपोखरी ६	कृषि	—	निल व. थापा
४००	गोपाल थापा	रानीपोखरी ६	"	—	गोपाल थापा
४०९	गोपाल थापा	"	"	"	गोपाल थापा
४०२	पवनसिंह थापा	पल्लु ५५०६	"	"	पवनसिंह
४०३	इन्दु थापा	पल्लु ६	"	—	
४०४	मेनका देवी कुमारी	पल्लु ९ गाउँपालिका		५८५०४५३५०२	मेनका देवी
४०५	पद्म देवी कुमारी	पल्लु ९ गाउँपालिका		५८४५९५३५०५	पद्म देवी
४०६	पञ्चाजल देवी	भक्तिपुर गाउँपालिका		५८५३०२४५३५०६	पञ्चाजल देवी
४०७	मदन देवी	बागिचोखरी गाउँपालिका		५८५५२३५३५०७	मदन देवी
४०८	पद्म देवी	भक्तिपुर गाउँपालिका		५८४६६६०६०६०८	पद्म देवी
४०९	कृष्ण कु. थापा	रानीपोखरी ६	कृषि	५८४५९०६५९०९	कृष्ण कु. थापा
४९०	पद्म दे. भाले	रानी डाँडा	कृषि	९४०६५५४०१०	पद्म देवी

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
४११	डेब वहाडुर भाले	काँडे १	शिक्षक	९८०५१५५४०९	
४१२	चाम वं लाम	"	अ. प्र.	-	
४१३	बेसन साह	काँटेदरवार	विश्वार्थी	९८०४१५४९४२	
४१४	शरीर १०	- "	कृषि	-	
४१५	राम भक्त गैरे	बिछिड, रा. पोखरी	कृषक	९८५६०२०१०९	
४१६	विष्णु व. खड्ग	काँडे बोनपुर	कृषि	९८२५१८९५५३ ९८२५१८९५५३	
४१७	दिपक गाना	गौरीगुँडी २	कृषि	९८५६१२१५१	
४१८	रहीमान लाम	छिप्टु ८	"	-	
४१९	हानीमान लाम	छिप्टु ९	"	-	
४२०	विपिन थापा	रा. पोखरी - ७	"	९८०६७७०५७३	
४२१	राजकुमार शर्क	रा. पोखरी - ८	"	९८२५१००११६	
४२२	चन्द्र वं. खामरा	गिरिगेर - २ थप्रे	गोठारि	९८४१८६६५५०	
४२३	विमोद खामरा	गिरिगेर - ३ थप्रे	पडाइ	९८४०४०२०७	
४२४	बहादुर थापा	दीसीडु, ९	क्रिडा	-	
४२५	सुध्या . व. फल्के	थप्रे गा. १		-	

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
४२७	दीपका शर्माला	जामुने - ४	बुद्धि		५५५५५५
४२८	श्रीमान प्रकाश पौडेल अध्यक्ष अरुण नेपाल			९८५५५५५५५५	५५५५५५
४२९	श्रीमान शर्माला	जामुने		९८५५५५५५५५	५५५५५५
४३०	श्रीमान व. पौडेल	कापुला		९८५५५५५५५५	५५५५५५
४३१	श्रीमान व. पौडेल	कापुला			५५५५५५
४३२	श्रीमान व. पौडेल	कापुला			५५५५५५
४३३	श्रीमान व. पौडेल	कापुला			५५५५५५
४३४	श्रीमान व. पौडेल	कापुला			५५५५५५
४३५	श्रीमान व. पौडेल	कापुला			५५५५५५
४३६	श्रीमान व. पौडेल	कापुला			५५५५५५
४३७	श्रीमान व. पौडेल	कापुला			५५५५५५
४३८	श्रीमान व. पौडेल	कापुला			५५५५५५
४३९	श्रीमान व. पौडेल	कापुला			५५५५५५
४४०	श्रीमान व. पौडेल	कापुला			५५५५५५
४४१	श्रीमान व. पौडेल	कापुला			५५५५५५
४४२	श्रीमान व. पौडेल	कापुला			५५५५५५




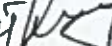





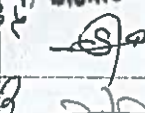

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
४४३	लिमि. मा. मा. उ. मा. मा.	रिश्तीङ्ग, प. ल. न. - ५	कृषि		लि. मा.
४४४	वि. वि. मा. मा. वि. वि.	१, - ५	कृषि		
४४५	सि. वि. वि.	१, १	१, १		
४४६	स. वि. वि.	१, १	१, १		
४४७	न. वि. वि.	१, १	१, १		
४४८	न. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४४९	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५०	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५१	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५२	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५३	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५४	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५५	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५६	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५७	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५८	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४५९	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.
४६०	इ. वि. वि.	१, १	१, १	९८९४९४९२०९	सा. वि.

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४५९	दिप कौ-	बिराट-	किसान		
४६०	प्रम बा. आले	व्यास ६ पाण	किसान	९८९५१५०१५	
४६१	सुखल पा थापा	व्यास ६ पाण	किसान	९८०४९६६६७	
४६२	महेश थापा	व्यास ६ पाण	किसान	९९९९९९९९९	
४६३	जितन थापा	व्यास ६	कृषि	९९१६६०३२७५	
४६४	बेनेय थापा	व्यास ६	मिस्त्री	९९२५१९९५९९	
४६५	विनय थापा	व्यास ६	कृषि	९८००११७७४	
४६६	सुखल पा थापा	" "	"	९८०६६५१५५५	सुखल
४६७	सोमनाथ थापा	कोटेश्वर	"	९९०५८९५६१०	सोमनाथ
४६८	पद्म ल. आले	कोटेश्वर	"	९८४४९९९९९	पद्म
४६९	ईमान सिंह आले	हेल्मी	"	९८०६२६२०५९६	ईमान
४७०	शिव पट्टिया	पट्टिया - २	मजदुर	९९२५१३५९३०	शिव
४७१	अजुना कुमाल आले	पट्टिया - ६	कृषि	९८४६०२५५६	
४७२	सुखल थापा	व्यास - १०	शिक्षक	९८४६२४४९९९९	
४७३	जल वहाइ थापा	व्यास ६	मजदुर	९८४६०६५९९९	
४७४	जो विन्दराज गिरी	व्यास ६	कृषि	९८४६६५९२४९	

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
८६५	हिमराज अर्रो	बस ६ वेंतनी	बजदुरी	९८०६१००५०	
८६६	हिलवाहाङ्ग	माथुडाभरती	फिसान		
८६७	लोकेन्द्र उड्डु	बस ६ पुल्पा	देवान	९८१२५२७५५१	
८६८	चन्द्र उड्डु	" "	"	९८५६११४५५५	
८६९	अमर उड्डु	" "	"	९८२५९९१७१२	
८७०	मैनुका थापा	काहुँखिपुन	"	९८०६५८०८७७	
८७१	अमर लिम्बू	०५/१९	"	९८०३२७१११	
८७२	कुम बहादुर थापा	लिमा १५१५१	"	९८२३१५८९१५९	
८७३	श्री विक	काहुँ		९८०३९३५००९	
८७४	Jurnal Shree patan		अमर	९८५६३९३२२२	
८७५	Pran Bar Pan Patan		अमर	९८१११४५५९	
८७६	विजय गिरि	बस-६ पाख	अ.उ. अर्रो	९८६६९२०७५	
८७७	शिव ०६५५ (१-१)	बस-६ पाख	अ.उ.	९८४३१३१७१	
८७८	डि. को. ज्ञान थापा	बस-६, पाख	अमर	९८५६०६२५५	
८७९	वि. को. ज्ञान थापा	काहुँखिपुन	अ.उ.		
८८०	इन्द्र थापा	काहुँखिपुन	अ.उ.	९८०६६५५५५	

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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
४९१	तिलमाथी	कादुशिवपुर १	कृषक		तिलमाथी
४९२	रोसनी थापा	भक्तपुर १	विद्यार्थी		
४९३	सुनिल शर्मा	जामुना - ४	कृषक		सुनिल शर्मा
४९४	सपना भट्ट	जामुना - ४	कृषक	९८५६०६७३१	Sapana
४९५	अनिशा थापा	मालिङ्गा १	विद्यार्थी	९८५६०६०८६८	Anisha
४९६	नरमाया रिनाजी	कोटदरवार १	कृषक	९८१८१३०१११	Narmada
४९७	कमल बहादुर शर्मा	कोटदरवार	कृषक	९८९९९९९९९९	Kamal
४९८	जेमाथी	दाङ - ८	कृषक		जेमाथी
४९९	प्रदिप शर्मा	जामुना - २	शिक्षक	९८९९९९९९	Pradip
५००	हेमन जीरी	मिर्चिङ्ग पाल्म - ३	कृषक		
५०१	मोति सुब्बा	जामुना - ११	धार्मिक	९८५६०६५२३५	Moti
५०२	रिम लो	चापा ४	कृषक	९८५६०६५२३५	Rim
५०३	मुनाफ मिश्र	मिर्चिङ्ग गाविस	कृषक	९८१४१४२४१०	Munaf
५०४	जवनाजी गिरी	जवनाजी गाविस	कृषक	९८५६०६५२३५	Jwana
५०५	दिल लो	दिल लो गाविस	कृषक		
५०६	मिमसा राना भट्ट	काँटे १	कृषक	९८०९२३०३४९	Mimsa

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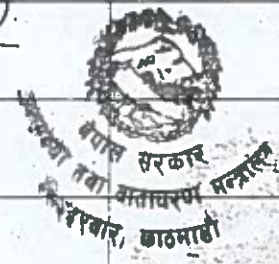
क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२०६	यम कुमारी	रुपिङ्ग पाटन-१	कृषि	९८१६६०८५७५	यम कुमारी
२०८	मिलक प्रसाद	रुपिङ्ग पाटन-१	कृषि		
२०९	सुपिका चौधरी	रुपिङ्ग पाटन	कृषि	-	
२१०	विष्णु कुमार डोल्डा	रुपिङ्ग पाटन	कृषि		
२११	जोमाया थापा	कोटहरा	कृषि	९८१७७०२७१	
२१२	श्री सन्तलाल श्रेष्ठ	रुपिङ्ग पाटन-१	कृषि	९८१६०६२९८७	
२१३	ह. का. व. चौधरी	-	कृषि	९८१६०७५५६०	
२१४	कु. चौ. व. चौधरी	पल्टेडा	कृषि	९८१६०७५५६०	
२१५	कु. चौ. व. चौधरी	पल्टेडा	कृषि	९८१६०७५५६०	
२१६	मिलक प्रसाद	पल्टेडा	कृषि		
२१७	दिलक चौधरी	कोटहरा	कृषि	९८१६०७५५६०	
२१८	धनकुमार चौधरी	कोटहरा	कृषि	९८१६०७५५६०	
२१९	अनन्त चौधरी	कोटहरा	कृषि	९८१६०७५५६०	
२२०	धनकुमार चौधरी	कोटहरा	कृषि	९८१६०७५५६०	
२२१	धनकुमार चौधरी	कोटहरा	कृषि	९८१६०७५५६०	
२२२	धनकुमार चौधरी	कोटहरा	कृषि	९८१६०७५५६०	

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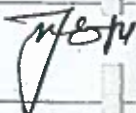
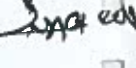

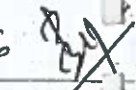
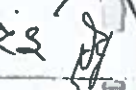
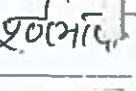
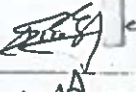
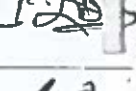
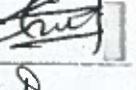

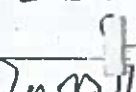





क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२२३	श्रीत/	चौक १			श्रीत/
२२४	रितु	हाडु, २			रितु
२२५	कामा पुन	लपाम ८		९८९६२४२३८२	पुन
२२६	विष्णु ठुम्हाले	जमुना-८	डाक्टर	९८९६६९९३६	विष्णु
२२७	तेज बालुङ्ग ठुम्हाले	जमुना ६	कृषक	९८२५१९०३३३	Bibek
२२८	बालुङ्ग थापा	हाडु, ४	"		बालुङ्ग
२२९	सन्तमाया थापा	कौटुम्बिक २	हजि	९८५६९६५३६४	सन्त
२३०	पद्म थापा	कौटुम्बिक ८	"	९८०४९६२९९०	पद्म
२३१	वसन्ती थापा	धारापनि १	कृषि	९८०६६३७५४५	वसन्ती
२३२	आशा थापा	धारापनि			आशा
२३३	सुकुमा थापा	धारापनि १	कृषि	९	सुकुमा
२३४	दिलकुमारी वि.क	"	कृषि		दिलकुमारी
२३५	राम ठुम्हाले	हुम्ना १५३५	-		राम
२३६	राम बाबा थापा	हुम्ना १५३५	कृषि		राम बाबा
२३७	मणि कला राहा	धारापनि १	कृषि	९८९६३०९५५९	मणि
२३८	राम बाबा थापा	राम बाबा	"		



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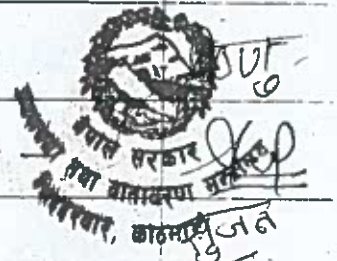
क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२३९	मोहन बहादुर शर्मा	कापुरा १	इलेक्ट्रिसियन	९८०८८००५७०	
२४०	राम बहादुर गर्ज	डाँडा रंगदी १	कृषि	९८०५८०५७७५	
२४१	शिव बालकृष्ण	व्याध-१०	इलेक्ट्रिसियन	९८५३९२०६९६	
२४२	पद्म वा थापा	जामुने - ८	हुषि	९८०२८९९०२६	
२४३	दल वा थापा	जामुने - ८	"	९८४६९९८८२३	
२४४	पुर्ण आया रामभाट	जामुने - ४	"	९८४६०३०३५	
२४५	आश्विन थापा	काँडा शिवपुर - १	"	९८४६२३२९२९	
२४६	रमेश वा थापा	काँडा शिवपुर - १	११	९८०५१८७९२१	
२४७	रमेश वा थापा	काँडा शिवपुर - १	कृषि	९८१६१४०४९३	
२४८	रेकबहादुर	काँडा शिवपुर		९८११४१७३०	
२४९	रमेश वा थापा	काँडा शिवपुर	कृषि	९८०८७७७८७	
२५०	विष्णु गर्ज	काँडा शिवपुर	कृषि		
२५१	डी जे. शाह	काँडा शिवपुर	कृषि		
२५२	बहादुर थापा	काँडा शिवपुर	कृषि	९८५६५३५८२९	
२५३	रमेश थापा	काँडा शिवपुर	"	९८५६५६५२५५	
२५४	रमेश थापा	काँडा शिवपुर		९८५६५६५२५५	



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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२२२	बेल बाँडा आले दाँडा	दाँडा		९८१६१५३२६१	
२२६	धमन सिँध्या	दाँडा २		९८२६२६६२९२	
२२७	लोड बा. आले	दाँडा - ४		९८०८९७३३९	
२२८	लेखनावा यो	दाँडा - ४		९८२५१७४९३७	
२२९	बैसम गाँवा आले	दाँडा - ४		९८४६२४२८८६	
२६०	गोपाल शर्मा	दाँडा - ६		९८४६३२९३२५	
२६१	हीन गन्ध्या	दुधेश्वर		—	
२६२	हेममरा	दुधेश्वर	—	—	
२६३	गोकुल शर्मा	दुधेश्वर	—	—	
२६४	गुमापा बाँचे	वेल्दार ९	कृषि	९८४६९३००३	
२६५	गुमापा मल्ल	वेल्दार ९	कार्यन्ता	—	
२६६	गुमापा मल्ल	वेल्दार - ९	विद्यार्थी	९८४६०९३२९२	
२६७	गुमापा मल्ल	वेल्दार ९	विद्यार्थी	—	
२६८	सकाश नेपाली	वेल्दार - ९	विद्यार्थी	—	
२६९	सुजन आले	वेल्दार - ९	विद्यार्थी	—	
२७०	गुन मारापण	दाँडा		मिति ९	



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क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२६१	हरिप्रसाद पौडेल	धनौली - ११	विश्व	९८५६४३००५८	
२६२	अम्बर काँडेल			३१५०८	
२६३	रवि शर्मा	जुम्ले ४	छिहान	-	
२६४	प्रदिप लामिडाने	जापुरे ०६	विद्यार्थी		
२६५	सन्त वं. डाँडा	कुर्छे चौबल १	किरसका	२५०२	
२६६	मल्ल बाबा	काँडाँडा ५२१	किसान		
२६७	लक्ष्मी कुमारी	धनौली १०	कृषि		
२६८	कमलामाया शर्मा	धनौली - ६			
२६९	मान शर्मा	काँडाँडा ६	कृषि		
२७०	प्रदिप राज शर्मा	काँडाँडा ६	कृषि		
२७१	नर बहादुर शर्मा	काँडाँडा ६	कृषि		
२७२	काँडाँडा ६	काँडाँडा ६	कृषि		
२७३	काँडाँडा ६	काँडाँडा ६	कृषि		
२७४	काँडाँडा ६	काँडाँडा ६	कृषि		
२७५	मान कुमारी	काँडाँडा ६	कृषि		
२७६	काँडाँडा ६	काँडाँडा ६	कृषि		

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तनहुँ जलविद्युत् आयोजनाको
पुरक वातावरणीय प्रभाव मूल्याङ्कन सम्बन्धी
सार्वजनिक सुनुवाई कार्यक्रम
उपस्थिती

मिति ०६/३/१६

क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
२८७	पिन के. दाई	साईदु गन्धारीपुर्	कृषि	९८२६७७६१९	पिन के. दाई
२८८	शुभा के. थापा	काहुँ, शिवपुर-१	कृषि	९८४६०६२३८९	शुभा के. थापा
२८९	कर्म सिंह थापा	काहुँ, शिवपुर-१	कृषि		कर्म सिंह
२९०	रेड् क. दाई (राजा)	काहुँ, शिवपुर-१	कृषि		
२९१	राजेश्वर खनाल	मिमाङ - १	कृषि	९८२६०२९३१	राजेश्वर
२९२	राजेश्वर खनाल	मिमाङ - १	कृषि	९८२९९३८६२९	राजेश्वर
२९३	कुल्ले वं. दासो	सापुचा - १	व्यापार	९८०६६९२९८८	कुल्ले वं. दासो
२९४	दिवा ग्याङ्ग	वासि रूपा - २	व्यापार	९८४६२०४०९२	दिवा
२९५	दुबरे दे. खनाल	— १ —	— १ —	९८४६०६३३९९	दुबरे दे. खनाल
२९६		साईदु गन्धारीपुर्	कृषि		
२९७	कुँडेमान राई	साईदु गन्धारीपुर् - १	कृषि	९८०९३८२६७	कुँडेमान राई
२९८	नारायण थापा	— १ —	सापुचा	९८४५०३०६३२	नारायण थापा
२९९	सुधाना माझी	— १ —	सापुचा	९८४५०३०६३२	सुधाना
६००	मा. बुलाल दासो	—	हुम्ले ८१२	९८०२६६३३९	मा. बुलाल दासो
६०१	लक्ष्मण थापा	वैलटार	कृषि	९८४३०३२३३३	लक्ष्मण थापा
६०२	रेड् क. दाई (गर्जा)	वैलटार	कृषि	९८४३०३२३३३	रेड् क. दाई

हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित
तनहुँ जलविद्युत् आयोजनाको
पुरक वातावरणीय प्रभाव मूल्याङ्कन सम्बन्धी
सार्वजनिक सुनुवाई कार्यक्रम
उपस्थिती

दिनांक ०६/३/१९

क्र. स.	नाम	ठेगाना	पेशा	फोन नम्बर	हस्ताक्षर
६०३	* पवित्रा शारु	०३६० -	कृषि		पवित्रा शारु
६०४	रामन्ती आले	"	"		
६०५	अष्टमाया थापा	"	"		रघु
६०६	सिम्राया थापा	"	"		श्रीमान
६०७	चावला माया थापा	"	"		
६०८	राम का आले	"	"	९८९३६८१२४८	राम
६०९	मधुसिं थापा	काँडाँ शिवपुर-१	शिक्षक	९८५६९३००२५	मधुसिं
६१०	उपम्वरा वि.म	काँडाँ शिवपुर-१	"	९३९०५८३८२३२	वि.म
६११	उम्वरा वि.म	"	"		
६१२	साजित शमशेर	जामुन ७	—	९८०६७९७९९०	साजित
६१३	उम्वरा थापा	पल्लेचु		९८४५३१२१९	उम्वरा
६१४	इन्द्रराज राणा	त्रि. वि. वि. लाम्दे	जोडले	९८५५००८५६	इन्द्रराज
६१५	देवेन्द्र जोशी	भाम्भोरा गा. वि. वि. अर्जुन गा. वि. वि.	समिति	९८४५२५२५३५	देवेन्द्र
६१६	मणिमोह आले	जामुन गा. वि. वि.	कार्यालय सहायक	९८५३०५०५८	मणिमोह
६१७	दली माया	काँडाँ शिवपुर	कृषि (माया)		दली

Appendix C-III

Queries and Suggestions from Public





नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष : (१) जलाशयले कुवाउने तर्फ परोक्षिकी पाइएन तपाइएकाथिबु
.....अहिले पुगी रेगिहालिबु कुमि क। साथै स्थल गौदात पर्दछन्
.....तपस्का रागी विमोष प्रवस्था हुनु पर्छो।
(२) जलाशय चार विधितेय लिफ्टेड, उविधी बाट उभर भुमि सिवाई
.....गीत्यत भुमिमा व्यावसायिक कृषिगाई खपेर गर्नु पर्दछ।
(३) भिमाद अपिपाशन दुई दमोली सोस आउने भोटर भोग निताणी हुनु
.....पर्दछ। परिक्षण नोट :- यो पदेमा मेरो मोवाइल वमरेछ अन्यथा शेकपी भोजनैछ
राय-सुभाष दिने व्यक्तिको नाम थर : सुदीप गैँडे सम्पर्क नं : ९८५६०६०६३३
ठेगाना : रातीपोखरी-९, विमोष पाशन, तनहुँ हस्ताक्षर :

नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष : नेपाल जलविद्युत प्राधिकरण वरिष्ठागाई कु भन्ने
.....चहान्छु भन्ने हामी वसो जगाए वनेहरुलाई रीनागाए दिनुहोला
भन्ने चहान्छु । विमोष भन्ने हामी प्रभावित क्षेत्र भित्रको
लाई प्रमुख स्थानमिवता वरिष्ठागाई अनुसार विभिन्न खालको
भाषाले जनेवा कागहरुमा जन पाइनु पर्छ। भन्ने अनुरोध
जाने चहान्छु ।
राय-सुभाष दिने व्यक्तिको नाम थर : वलवहादुर थापा साह सम्पर्क नं : ९८०६५३१६०५
ठेगाना : थ्यास ६ बनेनी पाशन हस्ताक्षर :



नेपाल सरकार
जल तथा वातावरण मन्त्रालय
सिन्धुखोला

नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष : प्रभावित क्षेत्रका जनतालाई स्थानिय हतारो
.....सोप विचार प्रकाश गर्ने सफलतामा नेपाल
विद्युत प्राधिकरणले वै व्यवस्था गर्ने योजना छ।
.....विमोष भन्ने माहिलाको हकमा
.....
.....

राय-सुभाष दिने व्यक्तिको नाम थर : धन कुमारी थापा सम्पर्क नं : ९८५६०६०८६८१
ठेगाना : काँडे शिवपुर १, ग्याला आमा सी, अदपत हस्ताक्षर :

नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष

प्रस्तावित क्षेत्रका स्थानिय बासिन्दाहरू
व हल व रोजगारीमा अनिवार्य सहभागिता गराउन अनुरोध
गर्न चाहन्छु ।

शुभ संतुष्टिपूर्वक सँगै तथा दक्षता युक्त रोजगारीको
व्यावस्था गर्ने सम्बन्धमा के लक्ष्य राखिने छ ।

प्रस्तावित क्षेत्रका बासिन्दाहरूलाई तनहुँ हाइड्रोपावर लिमिटेडले पक्की पुल

राय-सुभाष दिने व्यक्तिको नाम थर :

मिनो गुरुङ

सम्पर्क नं : ९८०६१९१०७२

ठेगाना :

तनहुँ हाइड्रोपावर लिमिटेड

हस्ताक्षर :

मिनो गुरुङ

नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष : यो तनहुँ हाइड्रोपावरको पक्का हाइड्रोपावर २ कि. मि.
पार काँडे प्रिन्स २१ चौप्रहा प्रत्यक्ष मोटर वाटो लाने काम
लान सुचारु किन चाहिन्छ । जुन टाढा प्रस्तावित क्षेत्रमा फेद पाइनेछ ।

राय-सुभाष दिने व्यक्तिको नाम थर : सोम, व. आले

सम्पर्क नं : ९८०६५१६३९२

ठेगाना : काँडे प्रिन्स २१ चौप्रहा

हस्ताक्षर : सोम, व. आले

नेपाल विद्युत प्राधिकरण
वातावरण तथा सामाजिक अध्ययन विभाग
तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष :

यो तनहुँ हाइड्रोपावर लिमिटेडको सन्ध्या नै सुन्दा
फुटुपट्टे पक्ष हाइड्रोपावरको प्रस्तावित जा. नि. व. को पक्का
व्यक्तिगत रोजगारीको अप्ठ्यारो हुन्छ । साथै प्रस्तावित
क्षेत्रका बासिन्दाहरू जग्गाको मुम्भन (चाविशरी) सट्टे गरिनेछ
भट्टिपुर्त हुन्छ । अलग पक्ष हाइड्रोपावर परिपोखरी लाई राजनितीबाट

राय-सुभाष दिने व्यक्तिको नाम थर :

अलग गराउनुपर्दछ ।

सम्पर्क नं : ९८०६५१६३९२

ठेगाना :

P.R. लामिडाने

हस्ताक्षर :

अलग गराउनुपर्दछ ।

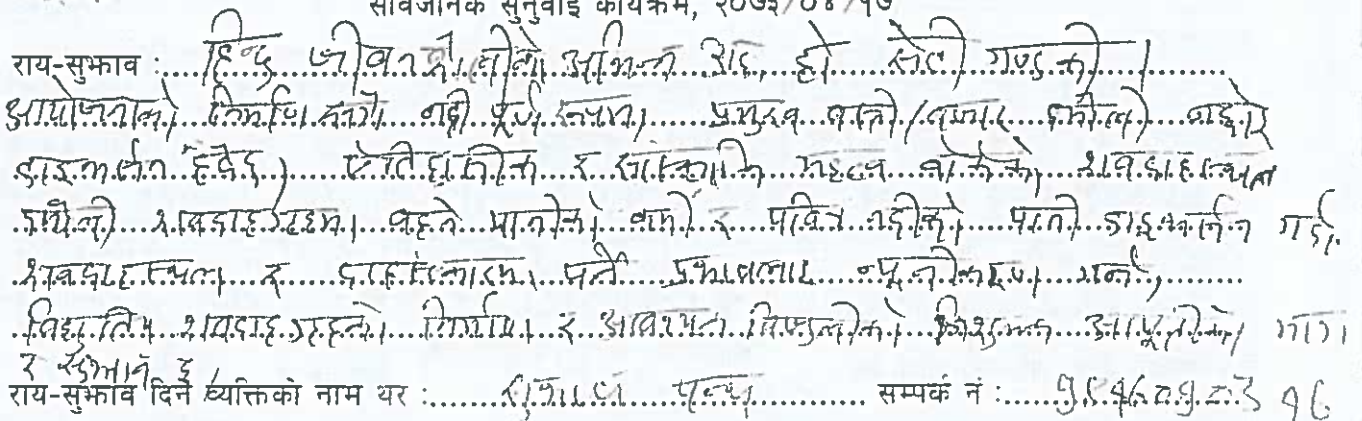


राय-सुभाष : आये जग उद्वेल समुद्र अधिबलेर कहिले को परिस्थिति
 भेते को ज्ञान वरणिय प्रभाव भयो माथो सत्रैतिक प्रभाव परी भ्रष्टान्त
 अपा आपो जग तुहुने काम गयो सबै प्रभाव सकात्मक बिचारिने
 होस ।

राय-सुभाव दिने व्यक्तिको नाम थर बालकृष्ण जै..... सम्पर्क नं : ९७४६०९६६३३
ठेगाना : भातकोट ९ बुडुवा तारौ..... हस्ताक्षर : ३०.०००१

राय-सुंकाव : सोल गिह वी र्खोलु वार पाति ~~त~~ तानेर हर वंताडने, सिंचण
खाने पाति, तरकारी खेती इाई आरुण हा। आयोजना वनेपहि पाति
प्रयोग कर पावळ के पावेल।

राय-सुभाव दिने व्यक्तिको नाम थर : राजि गिरी सम्पर्क नं : ९८९९५३०९
ठेगाना : २१ पोखरी ब. सुवि. ५८८ हस्ताक्षर : [Signature]



सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

ठेगाना : वाल्हाट ४ ११३ हस्ताक्षर : अमर

सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाव : सिद्धांतवासन सामुदायिक वन जागृक द फिलचीक का
उपभोक्तालाई सामुदायिक वन होई हुवान पूर्व भन्नेको हो
आधु आर्जन को लागि माग गर्दछौ र धधोर देखी
सती नदी सम्म बाहो पर्का वनहुन अनुरोध द
विचमा आपद आपद को लागि पुल को वषम्मा
बसाइन जस विद्युत प्रोजेक्ट लाई अनुरोध गर्दछौ
राय-सुभाव दिने व्यक्तिको नाम थर : लाल बहादुर ठकुरा सम्पर्क नं : ९८२८१३०३३३
ठेगाना : जागृक द फिलचीक हस्ताक्षर : *Alhokura*

सार्वजनिक सुनवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष १. लण्डन आईडा पावर चार्टर, २. दुवारा क्षेत्र के उच्चतम धारणी ६९३
३. दोरमलार क्षेत्र के राजगार ६९३, ४. दुवारा चार्टर प्रभावित क्षेत्र के लण्डन
पत्नी रत्ने। बिली के धारणी ६९३, ५. रंफालीर पानी वाट्टि विमा उच्चतम धारणी पाउडा
६. दाली धारणी चार्टर पाइयाडा
..... ७. प्रभावित क्षेत्र लार्ड उच्चतम क्षेत्रीय क्षेत्र के लिए दोरमलार
..... क्षमता, उच्चतम क्षेत्र के राजगार के उच्चतम क्षेत्र ६९३
राय-सुभाष दिने व्यक्तिको नाम धर : वापुसामोई सम्पर्क नं ६८८६२३२२

राय-सुभाष : पुराणा व शास्त्र निर्दिष्टानुसार वारे के
नाली खन्दा निकट आदित्य मन्त्रोक्त यसलाइ
हैरीदीपु पत्तो ॥

राय-सुझाव दिने व्यक्तिको नाम थर : सम्पर्क नं :

ठेगाना : हस्ताक्षर :

राय-सुभाष (11) इत्यादि अन्धा तन्त्रो वेल्डमा वस्त्र वासिन्का लाई सुरक्षा को व्यवस्था कस्तो छ ? सुल्तान वार्ड पत्र-

(11) मु. (पञ्च प्रमाणित) श्रेष्ठता पत्र कारो तथा रंगावा कारो निर्माण
जातिगत दु कुस्ती प्रभव (पञ्च) ही
राय-सुभाष दिने व्यक्तिको नाम थर : सम्पर्क नं : 8. 58. 0. 3. 3. 3. 3
ठेगाना : काठमाडौं - 9 काठमाडौं हस्ताक्षर : [Signature]



राय-सुभाव : — राजगारीको व्यवस्था हुनुपर्ने।
विजुली वती निःशुल्क वाहन लाग्ने।

गण-सभावा दिन व्यक्तिको नाम थर विष्णु कुमार के शारा सम्पर्क नं

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- १) राय-सुझाव : जोहला एक ठो सिपु मूलक काम तालिम - पुम्वे बाजु
भरि एक ठो परो अनुसाको रोजगारी दिनु पर्ने ।
२) यस हाइड्रोपावर ले यहाँ काम गर्दा महिला हिंसा रहित हुनु पर्ने तर
कुनै महिला माथी हिंसा भएका हाइड्रोपावर निर्माण पारी लिन पर्ने ।
३) यस तनहुँ जिब्ला मा कती पनि सरोकार समिती छैन त्यसकारण नभई
वडा वासी एक नै सरोकार रहने गरी सरोकार हुने छ ।

राय-सुझाव दिने व्यक्तिको नाम घर : सम्पर्क नं :

ठेगाना : हस्ताक्षर :

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राय-सुझाव : तनहुँ हाइड्रोपावर द्वारा व्याप्त ३ गाउँचौर मेहरु प्रागलिङ्ग
प्रतक्षरुपमा प्रभाव पर्ने गरी हाइले पावरको पोल निर्माण गर्दा
स्थानीय वासीन्दाहरूलाई कुनै असरकारी विना वनहरूको संरक्ष
नले प्रवाक परेको छु हुदा उक्त हाइड्रो पावर पिलर बनाए
को ठाउँमा पर्ने गरुडा समुदायका बासिन्दा हिन्दु धर्मका
हेरु समुदाय समाधान तनहुँ हाइड्रोपावर लिमिटेड द्वारा हाइ
राय-सुझाव दिने व्यक्तिको नाम घर : सम्पर्क नं :

ठेगाना : हस्ताक्षर :

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- राय-सुझाव : व्याप्त ६ पावरबाट व्याप्त १० साली नकर महर लेवल पुल हुनु पर्ने
१) व्याप्त ६ पावरले वेनिपाकको लेवल नल्लो पावरको मा विद्युत लइन जोड्नु पर्ने
लोड सेलीय मुक्त हुनु पर्ने महरको कोल पर्ने पत्रे गरी नाली कान हुनु पर्ने
२) परासा निमा वि स्नाथ बाकलो कती बाह्र ३० फुट बाहो बाह्र नकरु पहिले
वेबान-बन परेको छानो जायक गर्नु पर्ने ।
३) माया सङ्घ लेल जा भएका महिला एक ठो सिपु मूलक काम गर्नु पर्ने ।
राय-सुझाव दिने व्यक्तिको नाम घर : सम्पर्क नं :

ठेगाना : हस्ताक्षर :



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राय-सुभाष : १ घर १ टोलगाउँ को व्यवस्था गर्नु पर्ने ।
२ वाने पानी को राख्न स्वच्छ, निलोउम्र पर्ने ।
काँटे/खिचुरा - १ भापुटा (ब्या) क्षेत्रको वाने पियेउर्ने
योजना ल्याउनु पर्ने ।

राय-सुभाष दिने व्यक्तिको नाम थर : रोल व. नेपाली सम्पर्क नं :
ठेगाना : काँटे/खिचुरा - १ हस्ताक्षर : रोल व. नेपाली

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राय-सुभाष : १, जलासायको विच भागमा पर्ने गरी लंगो भरा
दा. ७ गा. वि. स. ता. ३, भावत भावत गर्म सुविधा हुने
गरी हुडेट) पक्की पुलको व्यवस्था गर्नु पर्ने
(कुल्लेखोभुट्टे पुल)

राय-सुभाष दिने व्यक्तिको नाम थर : बुडा राम पटियार सम्पर्क नं : ९८५५५५५०६
ठेगाना : ९८५५५५५०६, धुपिपट्टा हस्ताक्षर : बुडा राम पटियार



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राय-सुभाष : योजना संयोजन र सार्वजनिक लागि सर्वे पक्षबाट मैत्रीपूर्ण
ला. वा. र. संयोजन गरियोस । प्रशासकीय क्षेत्रको जनशक्तिलाई पनि
सहज रूपमा संयोजन गरियोस र ज्ञान, सीप र अनुभवको पनि
केन्द्र गरियोस । स्थानीय सार्वजनिक सेवाको पूर्ण पूर्ण प्रत्यक्ष
अन्तर्गतको भेला, सार्वजनिक सभा, सार्वजनिक सभा, हितको लागि
भारत पनि प्रभावित क्षेत्रको सामाजिक, आर्थिक, प्रवि. सुनुवाई होस ।
मन्त्रालय र सि. थापा/आश्विन थापा सम्पर्क नं :

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राय-सुभाब : हाल सम्म स्थायी रूपमा चरि-चरमा रहेको आएको डोजमा पुग्नुपलन गर्ने मूल आधारलाई यस आयोजनाले कुरी अध्ययन अध्ययनमा आधारित गरेको हो र यस गानविन्धुका अर्बवन्दी ५०००० (पाँच लाख) गरी, गोर्खा, गैँडी, गैँडी, वारुवा आदि यस डोजमा चर्कि। यसमा आयोजना ध्यान गएको देखिन्छ।

राय-सुभाब दिने व्यक्तिको नाम थर : हरिवंश गौरी सम्पर्क नं : ९७४६५३३८९
ठेगाना : श्री पोखरी ९, धुषि, पाटन हस्ताक्षर : हरिवंश गौरी

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राय-सुभाब : प्रभावित एक घर एक लेजगाएको व्यवस्था
मिल्ने गरिएको लागि अनुरोध गर्दछु।

राय-सुभाब दिने व्यक्तिको नाम थर : लालिमा गौरी सम्पर्क नं : ९५९४९८४६३४
ठेगाना : १३५५ श्री पोखरी हस्ताक्षर : लालिमा गौरी

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राय-सुभाब : सामाजिक दायित्व अन्तर्गत प्रभावित क्षेत्रमा समुदायिक भवनहरूको निर्माण विद्युत प्राधिकरणले गर्दै कि गर्दैन?

राय-सुभाब दिने व्यक्तिको नाम थर : दलिसर थापा सम्पर्क नं : ९८५६१८६३६७



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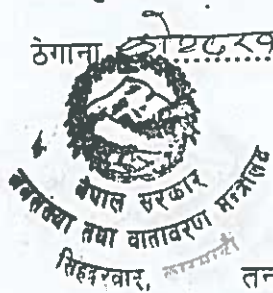
राय-सुभाष : (१) ... देवरी योजना, युद्ध मरिचिको छेउमा
... देवरी योजना, देवरी को धुलिखोला नदि पश्चातको
... २ नं (२) देवरी योजना, जहाँ गंगा खोला बग्छ, यहाँ देवरी
... विभिन्न विद्यालय, स्वास्थ्य चौकी, विद्या
... को छेउमा छ, जहाँ अरु कतै छैन
... यहाँ देवरी योजना, आसन्न बागेश्वरी धारा छ, यहाँ वनाछ

राय-सुभाष दिने व्यक्तिको नाम थर : ... सम्पर्क नं : ९८५६५३०५८१
ठेगाना : ... हस्ताक्षर :

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राय-सुभाष : ... देवरी योजना, युद्ध मरिचिको छेउमा
... देवरी योजना, देवरी को धुलिखोला नदि पश्चातको
... २ नं (२) देवरी योजना, जहाँ गंगा खोला बग्छ, यहाँ देवरी
... विभिन्न विद्यालय, स्वास्थ्य चौकी, विद्या
... को छेउमा छ, जहाँ अरु कतै छैन
... यहाँ देवरी योजना, आसन्न बागेश्वरी धारा छ, यहाँ वनाछ

राय-सुभाष दिने व्यक्तिको नाम थर : ... सम्पर्क नं : ९८५६५३०५८१
ठेगाना : ... हस्ताक्षर :



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राय-सुभाष : (१) ... देवरी योजना, युद्ध मरिचिको छेउमा
... देवरी योजना, देवरी को धुलिखोला नदि पश्चातको
... २ नं (२) देवरी योजना, जहाँ गंगा खोला बग्छ, यहाँ देवरी
... विभिन्न विद्यालय, स्वास्थ्य चौकी, विद्या
... को छेउमा छ, जहाँ अरु कतै छैन
... यहाँ देवरी योजना, आसन्न बागेश्वरी धारा छ, यहाँ वनाछ

राय-सुभाष दिने व्यक्तिको नाम थर : ... सम्पर्क नं : ९८५६५३०५८१
ठेगाना : ... हस्ताक्षर :

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ठेगाना : बाराह १. पी. पी. मन्ने दीरा हस्ताक्षर : [Signature]

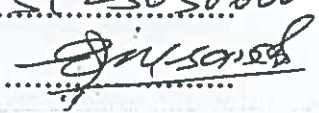
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राय-सुभाव : यो ठाउँमा हुन गइरहेको हाइड्रोपावर निर्मिले
ले यस सँगै मन्दा बढी प्रभावित होउका लागि
बाई कारवा र पाखा लागीकन पहिलो प्राथमिकता
दिनुपर्ने हुन्छ यहाँ कस्तो व्यवस्था गरिदु वताईदिनुपर्ने
राय-सुभाव दिने व्यक्तिको नाम थर : कल वहादुर नेपाली सम्पर्क नं : धन्यवाद
ठेगाना : का.पु.ला. तनहुँ हस्ताक्षर :

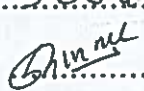
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(9) राय-सुभाव : ...
...
राय-सुभाव दिने व्यक्तिको नाम धर : ... सम्पर्क नं : ...
ठेगाना : ...

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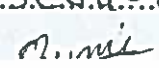
राय-सुभाव : (जतिन) प्रमाणित ईन्जिनियर गिरी
..... कानुनशास्त्री श्रीमान् पदम दुरा मरुकेले हाम्रो निवास
..... १॥१६॥ पहिल्लो तल्लो भाग पनडिह
..... निवास कार्यालय तल्लो हडपानी अर्को निवास गरी
राय-सुभाव दिने व्यक्तिको नाम थर : हृदिचन्द्र वाल्मीकि सम्पर्क नं : ९८४६०६०६६०
ठेगाना : कास-९९ हस्ताक्षर : 

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राय-सुभाव : क्यास-६ पाटन बजार - जल विद्युत आयोजना र स्थानिय जनता र सर
का (वाल) विच बलजलका निर्माण गरि पाटनको अर्को काबार ६५ फुट
बालो सक्ने भएकै, र एक एक क्यासलाई काट्ने गरेर क्यास भुञ्ज्छन् दिनु
नपर्ने अनुरोध के क्यास न फाल्ने आदि सारी पहिल्लै देबि प्रयोग हुने
आइ र्हेको ३० फुट काट्नेलाई न लाग्ने कडा शर्त त्यही ३० फुट सावुरो
बालोलाई प्रयोग गर्ने सहमति नराइको देबिन्दा - पूर्व सेलगत
राय-सुभाव दिने व्यक्तिको नाम थर : डिहली राज थापा सम्पर्क नं : ९८४६०६२१८८
ठेगाना : क्यास-६ पाटन हस्ताक्षर : 



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राय-सुभाव : हरेक प्राप्ति सक्नेको आफ्नै घरमा ३० फुट बालो प्रयाप्त दिन १ आना भुञ्ज
क्षति, सेलगत लार्ड असा हुने सक्ने सक्छ हुने सुनिन्छ, भुञ्ज्छन् दिनु नपर्ने
सक्नेको सक्छ, बालो पिच गरिदिने, दोहोरो नाली काट्ने दिने र क्यास-१०
र क्यास-६ पाटन जोड्ने ओटा खल पुन बनाउने विषयमा सहयोग
गरी दिने उद्धार आवाहन अनुरोध सहमति भएको छ र गर्ने सुनिन्छ
स्थानिय जनता, सरकारी काला ग्रह विषयमा सहमति गर्ने सक्ने को सेलगत
राय-सुभाव दिने व्यक्तिको नाम थर : डिहली राज थापा सम्पर्क नं : ९८४६०६२१८८
ठेगाना : क्यास-६ पाटन हस्ताक्षर : 

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राय-सुझाव दिने व्यक्तिको नाम थर : राजेश्वर शर्मा सम्पर्क नं : ९८५६०२९६३९
ठेगाना : जिला-९ ललितपुर हस्ताक्षर : [Signature]

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राय-सुभाव दिने व्यक्तिको नाम थर : डि. वी. राय. भा. पा. सम्पर्क नं : ९७६०६३९८८
ठेगाना : ख्यास-६, पाल्पा हस्ताक्षर : B. Kumar

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राय-सुभाव दिने व्यक्तिको नाम थर : मदन शर्मा सम्पर्क नं : ९८०६४८५३३
ठेगाना : गान्धियादेवी, इ. १२६ हस्ताक्षर : [Signature]

राय-सुभाव दिने व्यक्तिको नाम घर : सुन्दर लाल श्रेष्ठ सम्पर्क नं : ९८५६०६२९८७
ठेगाना : व्यास-१, माड, गार्ड, काँचेली, लुम्बिनी हस्ताक्षर : अमित ९६५५६०२३९

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राय-सुभाष : ~~मेरो~~ ~~पोखरा~~ ~~जमि~~ ~~रोड~~ ~~बाट~~ ~~वास~~ ~~६~~ ~~दिने~~ ~~रोड~~ ~~जाने~~ ~~पत्र~~ ~~हुन~~
लागी रहेको छ तर ~~वास~~ ~~नग~~ ~~नापी~~ ~~स्वा~~ ~~मा~~ ~~जादा~~ ~~जस्त~~ ~~जस्त~~ ~~मई~~ ~~मई~~
रुकिएको बसो बसाई छुन लागे केही पनि छैन नभएको कतौ बाप्तीछको
पुछा पनि परेको छैन र बाटो परशुराम गिरी को घर निर भालो हालेको लडा
निर के भएनो यो ठिकाण के हो र वडा बासी छुन नगर पालीको बापी लेगेको
जमिन समु दार्इ छुन को चित बुझ्छ नभएको पुछा नापा समु दार्इ लाई राखि फेरी गनु
राय-सुभाष दिने व्यक्तिको नाम थर : ~~जुना~~ ~~हुन~~ सम्पर्क नं : ~~९४५१४५२८२~~
ठेगाना : ~~वास~~ ~~६~~ ~~वैलि~~ ~~पाहन~~ ~~होला~~ ~~मध्य~~ ~~हस्ताक्षर :~~

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राय-सुभाष : १. ~~आपा~~ ~~घाट~~ ~~देखि~~ ~~पछा~~ ~~आ~~ ~~विद्युत~~ ~~लाय~~ ~~र~~
काक्लो वस्ती विचमा नभएर रेखाङ्कन गरेकै बाटो निर्माण
गर्नेछौ ।
२. शाली र सुरक्षाको उपारे-टी हुनुपर्ने ।
३. प्रभावित क्षेत्रका बासिन्दालाई रोजगारी व्यवस्था हुनुपर्ने ।
राय-सुभाष दिने व्यक्तिको नाम थर : ~~उषा~~ ~~भेत्री~~ सम्पर्क नं : ~~९८४६६१०६०४~~
ठेगाना : ~~वास~~ ~~६~~ ~~पाहन~~ ~~हस्ताक्षर :~~

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राय-सुभाष : ४. तनहुँ हाइड्रोपावर कि को योजनाको क्षेत्रमा
शाली सुरक्षाको गपारिनी हुनु पर्ने ।
५. घाटका दिदी बेनी दाउ भई हल्लाई सीप बल्छ
तालीम को व्यवस्था हुनुपर्ने । शैक्षणिकीको व्यवस्था ।
६. पाटन क्षेत्र मा भूकम्पको गर्दा को कसको खेदवशमा गरीयो ?
राय-सुभाष दिने व्यक्तिको नाम थर : ~~जानकी~~ ~~गिरी~~ सम्पर्क नं : ~~९८४६०९०६२६१~~
ठेगाना : ~~वास~~ ~~६~~ ~~पाहन~~ ~~हस्ताक्षर :~~

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राय-सुभाष : जिलासय युक्त जल विद्युत आयोजना निर्माणको
क्रममा ६:२६ वर्षा किलोमिटर नक्का तलाउ बढ्ने ।
जानिको सतह छरे हुदा जर्मि मौसममा वर्षा वाष्पीकरण
गै आकृता बढ्ने जान्छे जसले वातावरणको तापक्रम
बढ्ने क्षति बढ्ने छन । त्यसै र मुजोभले पुसपुस जेठीको
वाहिक पुग्नेछे । त्यसको गै वाहिक जेठीको बढ्ने
पछि जेठीको बढ्नेछे । त्यसको गै वाहिक जेठीको बढ्ने
राय-सुभाष दिने व्यक्तिको नाम थर : राजेश खनाल सम्पर्क नं : ९८२५१२८६२९
ठेगाना : भोजपुर न. तनहुँ हस्ताक्षर : [Signature]

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राय-सुभाष : मेरो सुभाष सबैभन्दा पहिलो र जाने पानी बग्ने
थपान्ता राम्रो होस । यहाँ लड्का बनाउदा पाईप
लाईनहरू फाँटिएको हो । त्यसलाई राम्रो व्यवस्था
गारेयोस । र त्यसो सावधानी सड्का हेर्न राम्रो व्यवस्था
होस ।
राय-सुभाष दिने व्यक्तिको नाम थर : राम व. पुनामी सम्पर्क नं : ९८४६३३०८२०
ठेगाना : काँडेखिवपुर-१ मालिङ हस्ताक्षर : [Signature]

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राय-सुभाष : प्रस्तावित क्षेत्रका समुदायको विद्युत
सुसामग्रीलाई सुरक्षाको निम्ती भु.पु. शान्ति
तथा भु.पु. सुरक्षाको सुरक्षाको आवश्यकता
पने भन्दा पहिलो प्राथमिकता यहाँको
वासिन्दा भु.पु.ले सुरक्षा गाड पाउनु पर्ने
राय-सुभाष दिने व्यक्तिको नाम थर : [Signature] सम्पर्क नं : [Signature]



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राय-सुझाव : यहाँ आगोखुमा क जुम्रे पनि राजमिति पढा हो
फाया भित्रै बिमल राजमिति रहित भएर योजना सफल
पनि हो पनको लागि अग्रसर हुन आग्रह गरिन्छु

राय-सुझाव दिने व्यक्तिको नाम थर : दिवा पृष्ठ वानियाँ सम्पर्क नं : ९८९४९८४३२
ठेगाना : चर्दीम २११ पोखरी - ३ हस्ताक्षर :

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राय-सुझाव :
२८० वं कीला भईने को बाढीले पनि जारी राखे छ
भनी आब पछि केही ला २ हाभी लाई दोलि पाउ
नु पछे नाम वैकुण्ठ नामा रहे

राय-सुझाव दिने व्यक्तिको नाम थर : सम्पर्क नं :
ठेगाना : हस्ताक्षर :



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राय-सुझाव : तेरी भादी देखी कृष्ण साईदे सम्मान
तु वरदा हुन परेको दम्भ आबला
र धार्मिक बर्हीकले काम तथा जागीर
पाउने पछिछे

राय-सुझाव दिने व्यक्तिको नाम थर : मन्दीप डाँले सम्पर्क नं : ९८९६९९०९२९
ठेगाना : बेल टाट न तनहुँ हस्ताक्षर :

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राय-सुभाष : १. आयोजना क्षेत्रको दक्षिण भागमा जलवायुको
व्यवस्था गरी नदीको
२. हाल सुरु गरिएको भए पनि मीलको पुलको अन्तिम ठाउँ
जलासाय गर्ने पाईड डुक्ने एवं स्टीमर चलाइ जलासाय
पारीपारी गर्ने व्यवस्था हुनुपर्ने
राय-सुभाष दिने व्यक्तिको नाम थर : प्रेम कुँहाडुरे शा.प्र. सम्पर्क नं : ९८४३५४९५८९
ठेगाना : छा.उ.क. २, तनहुँ हस्ताक्षर : [Signature]

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तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष : दाइ आ.वि.स. पट्टी नं. ६-७ र ८-९ को
उत्तर भागमा २०६८ साल पछि कमाई गरे स्वामि
को जग्गा जमीन आज भित्रै २०७३ साल सम्म गारे अझ
थियो भने भू-जमा द्वारा र भू-जमा कोही १२ जना
नामा नुतेनी दा. कुमान भए पछि दा. गुरु वस्ने दा.मा
लाइ के उन हुन्छ र दा.मा नेपाली नागरिक होइन भने
राय-सुभाष दिने व्यक्तिको नाम थर : उत्तर कुमार गुरु सम्पर्क नं :
ठेगाना : दा.उ. ज.वि.स. पट्टी नं. ६ हस्ताक्षर :

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तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७



राय-सुभाष : नेपाल विद्युत प्राधिकरणले सत्यार्थ
व्यापार्यको ६७ प्रस्तावित क्षेत्रको स्थानिय लाइ माभावर
राजगारीको माग गर्ने चेहाउछ

राय-सुभाष दिने व्यक्तिको नाम थर : इमान सिंह शर्मा सम्पर्क नं : ९८०६६२०३१६
ठेगाना : छा.स. ६, तेतेनी हस्ताक्षर : [Signature]

કાચો/જાલુ જ્યુ. જાણીયા/ ૨-૩/
 પ્રત્યક્ષ સરોઝાર વાલ/સંગ/ ૨-૪૨૫૫/ ૨૧-૧૧/
 માગ/ ગારીધ/

ठेगाना: काहू शिवपुर 9 झपुवार हस्ताक्षर: 

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तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष : आयोजनाको कारवाहीबाट रूख र घर परिवारहरूलाई स्थानान्तरण गर्नुपर्नेमा कुन कुन जाँचि रोक लगाउनुपर्ने घरघरी हर कतिपय लाख पुगी बला र कतिपय लाख पुगी नभएको पर्स प्रश्न पारे दिनुहुन अनुरोध गर्दछु।

राय-सुभाष दिने व्यक्तिको नाम थर : बलराज शर्मा सम्पर्क नं : ९८०८२६६६८६
ठेगाना : मार्कट-३ हस्ताक्षर : [Signature]

नेपाल विद्युत प्राधिकरण
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तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
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(तटवन्धनको लागि)

राय-सुभाष : आयोजनाको ३००० मिटर गत रूपमा भएका करिब १ कि.मि. पूर्व तर्फ पर्ने काँडेमिवाँर गा.वि.स. वडा नं.-१ हुन्थेदाँर क्षेत्रमा वर्षेनीको शुद्धता सेती नदीमा पानीको बहाव र प्रवाह अत्यधिक मात्रामा रहेको स्थानीय बासिन्दाहरूको मनीष बाधित रूपमा कहान प्रदि प्रत्यक्ष प्रति फोको हुँदा हुन्थेदाँर क्षेत्रको सेती नदीको किनारमा पवित्र नदिमा तर्फ धन बहाव मात्रमाको मगा भएको स्थान देखि पूर्व तर्फ हुँदा बहाव बाधको मगा भएको स्थानमा जानी लगाउने काम गराइने गर्छ भन्नेको खण्डमा हामी स्थानीयहरू सुरक्षित हुन्छौं।

राय-सुभाष दिने व्यक्तिको नाम थर : सुदिमान शर्मा सम्पर्क नं : ९८०९६८६८६८
ठेगाना : काँडेमिवाँर-१ हुन्थेदाँर तनहुँ हस्ताक्षर : [Signature]



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तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाष : अध्यापक सुरिन्द्र शर्मा तल क्याम्प सरिया समेत नदीको किनारमा तटवन्धन निर्माण सम्बन्धमा के यी खन रहेको छ र (विशेष सरिया मादी र सेतीको दोभान माको व्यवस्थित तटवन्धन निर्माण)

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तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाब : प्रेम बर थापा प्रायोजनाको पाटन - हुन्जेरा (जोड्रे पक्की) पूरा भएका भागमा (पश्चिम) १५०० मि. मा पर्ने १.५५६६६६-१ हुन्जेरा (जोड्रे) पर्ने बर खेती नदीको किनार नजिक भएकाले वर्षाको समयमा बलियो पानीले गाडने हो भनी माथिमा वाटुपारी हो छ । स्थानीय जनताको हुन्जेरा (जोड्रे) भन्ने नाममा खेती गर्ने कुरा जरी काट्ने हो हुन्जेरा (जोड्रे) प्रायोजनाको पूरा भएको स्थानमा भागमा करिब १००० मि. र तल करिब १००० मि. का क्षेत्रमा तल्लो तटवन्ध जोड्नेमा न लाग्ने स्थानीयहरूको धारणा छ । युरोपियन हुने भयो ।

राय-सुभाब दिने व्यक्तिको नाम थर : प्रिम. व. थापा सम्पर्क नं : ९८०९५५०९९८
ठेगाना : काठमाडौँ-१ हुन्जेरा तह हस्ताक्षर : प्रिम.

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सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाब : प्रायोजनाको जलमाथि रहेको भन्ने करिब १ कि.मि. तल काठमाडौँ-१ हुन्जेरा (जोड्रे) भन्ने नाममा खेती गर्ने कुरा जरी काट्ने हो हुन्जेरा (जोड्रे) प्रायोजनाको पूरा भएको स्थानमा भागमा करिब १००० मि. र तल करिब १००० मि. का क्षेत्रमा तल्लो तटवन्ध जोड्नेमा न लाग्ने स्थानीयहरूको धारणा छ । युरोपियन हुने भयो ।

राय-सुभाब दिने व्यक्तिको नाम थर : प्रिम. व. थापा सम्पर्क नं : ९८०९५५०९९८
ठेगाना : काठमाडौँ-१ हुन्जेरा तह हस्ताक्षर : प्रिम.



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तनहुँ हाइड्रोपावर लिमिटेड द्वारा प्रस्तावित तनहुँ जलविद्युत आयोजनाको
सार्वजनिक सुनुवाई कार्यक्रम, २०७३/०४/१७

राय-सुभाब : प्रायोजनाको पाटन - हुन्जेरा (जोड्रे) पक्की भएका भागमा (तटवन्ध तटवन्ध) १५०० मि. र तल (पूर्व तट) करिब १००० मि. माथि वर्षाको समयमा खेती नदीको किनार नजिक भएकाले वर्षाको समयमा बलियो पानीले गाडने हो भनी माथिमा वाटुपारी हो छ । स्थानीय जनताको हुन्जेरा (जोड्रे) भन्ने नाममा खेती गर्ने कुरा जरी काट्ने हो हुन्जेरा (जोड्रे) प्रायोजनाको पूरा भएको स्थानमा भागमा करिब १००० मि. र तल करिब १००० मि. का क्षेत्रमा तल्लो तटवन्ध जोड्नेमा न लाग्ने स्थानीयहरूको धारणा छ । युरोपियन हुने भयो ।

राय-सुभाब दिने व्यक्तिको नाम थर : प्रिम. व. थापा

			applicable), on actual cost basis.		
Loss of income by agricultural labourers /wage earners identified during verification census survey	Work opportunities reduced	Agriculture labourers indirectly affected by land acquisition or displacement of employer	One-time financial assistance equivalent to 90 days of wage to be computed on the basis of local wage rates in the district for each category of labourers.	Short-term assistance/ compensation for loss of income.	The EA, CDC and Supervision Consultant will ensure payments are made immediately after economic displacement.
Loss of wages by employees	Income reduced due to dislocation	Wage earning employees indirectly affected by displacement of commercial structures	One-time financial assistance to hired employees equivalent to 90 days wages to be computed on the basis of local wage rates as determined by CDC. APs who are semi-skilled and unskilled labourers will be considered for a priority in employment opportunities in the Project's implementation work.	Short-term assistance/ compensation for loss of income.	The EA, CDC and Supervision Consultant will ensure payments are made prior to displacement.

D. ADDITIONAL SUPPORT TO VULNERABLE.

Additional assistance to vulnerable groups including <i>janajati</i> households	Household income affected as a result of project construction official	Households categorized as vulnerable namely Women-headed households; disable or elderly person; ethnic/ occupational caste people; APs who live under poverty line	Cash assistance for 90 days at the local agriculture wage rate. Special assistance of Rs 10,000 to an affected vulnerable household for restoring livelihood.	Income restoration assistance	The EA, CDC and Supervision Consultant will ensure timely payment The Supervision Consultant would organize this training. The Supervision Consultant shall be
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			<p>At least one-person from each affected household will be considered for income generating vocational training and skill improvement options as per their choice.</p> <p>As far as possible temporary employment will be provided to affected households in the project construction work by the project contractor.</p> <p>Preference will be given to affected people living below poverty line, vulnerable or lost their employment or income generation source due to project impacts.</p>		responsible for this facility.
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E. LOSS OF COMMON PROPERTY RESOURCES

Loss of cultural and community structures/facilities	Common property resources such as monasteries, temples, ghat (cremation site) and community land and/or graveyards	Affected community/ Institution responsible for the administration of the property	Replacement or restoration of the affected community facilities (including temples, shrines, <i>ghat</i> , public water stand posts etc) in consultation with the affected community.	Replacement/ restoration of structure/facility	The EA, CDC and supervision consultant



	affected by the Project.		Or cash compensation for restoring the affected cultural/community structures to the recognized institution/ patron/ custodian of the affected structure. Project Assistance to move the structure to a new location		
Loss of structures or any asset which belongs to VDC or village community	Land on which property stands purchased or reclaimed for Project purpose	VDC or Village groups	Cash compensation at replacement cost. VDC or village group will be allowed to take salvaged material from the demolished structure at no costs. Transfer allowance in case of self-relocation to cover cost of shifting on actual cost basis or at the rate of NR 35000 per village.	Restoration of the structure	The EA and CDC are responsible to pay prior to affecting the assets

F. OTHER UNANTICIPATED IMPACTS

Unanticipated adverse impacts due to project intervention or associated activity	The EA and project implementation authorities will deal with any unanticipated impact of the project, during and after project implementation, based on the spirit of the principles agreed upon in RF and this RIPP.
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Appendix F

Master Table of Landuse





S. N.	Project Components	Land Type (in hectare)													Total Area (in hectare)
		Forest						Cultivated		Barren		River and Flood Plain	Built up/Residential		
		Govt.	CF	L H F	Rel	Pvt.	Govt.	Pvt.	Govt.	Pvt.	Public		Pvt.		
1	Reservoir Area	-	348.61	-	-	5.29	-	69.36	268.39	-	0.85	208.5	-	901	
2	Water Conveyance	Under Ground													-
	Tunnel														-
	Penstock														-
	Surge Shaft														-
	Tailrace	-												-	
3	Dam Site and Power House	-	15.7	-	-	-	-	-	-	-	-	2.3	-	18	
4	Access Road	-	15	-	-	-	-	15	-	-	-	0	-	30	
5	Sub-Station/Switchyard	Under Ground													
6	Quarry Site	-	23	-	-	-	-	2	-	-	-	-	-	25	
7	Disposal Site	-	0.3	-	-	-	-	19	-	-	7.51	13.79	-	41.01	
8	Camp and Project Site	-	15	-	-	-	-	5	-	-	6.475	0	-	26.475	
9	Construction yard and others	-	-	-	-	-	-	13.28	-	-	18	2	-	33.525	
Total Area		-	417.61	0	0	5.29	0	123.64	268.39	0	31.985	226.59	0	1075.01	





Appendix G

Approved EIA Report



