NEPAL ELECTRICITY AUTHORITY

ENGINEERING SERVICES

ABBREVIATED RESETILEMENT ACTION PLAN

of

Khimti-Dhalkebar 220 kV Transmission Line Project

FINAL REPORT

Submitted To

Transmission Line/Substation Construction Department
Durbar Marg, Kathmandu

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Table of Contents

List of Tables

EXECUTIVE SUMMARY

To evacuate the power generated from the various planed and proposed hydropower projects in the north eastern part of Nepal and to feed the eastern load centers in view of future system development plan; a 73 km long, double circuit, 220 kV Transmission Line Project has been proposed. The proposed transmission line will start from Khimti of Dolakha District and ends to Dhalkabar of Dhanusa District. The proposed transmission line alignment traverse through the Dolakha, Ramechhap, Sindhuli, Mahotari and Dhanusa districts of Eastern Development Region.

The present Abbreviated Resettlement Action Plan (ARAP) study has been undertaken as per the provision made in the ''Policy Framework for Environmental Impact Assessment for Projects under the Power Development Fund"2002. The Environmental Impact Assessment, Social Impact Assessment and the present ARAP study of the proposed project shows that 17 residential houses are found within 30 meter Right of Way (RoW) and thus needs to be relocated at the suitable sites. Among these houses, 3 houses are in Ramechhap, 9 houses are in Sindhuli and 5 houses are in Dhanusha districts.

Present study carried out census of these 17 families and collects the baseline information by using the appropriate semi-structured questionnaire. On the basis of the baseline information of affected families, a rehabilitation grant is proposed and an action plan is designed.

The total affected population of relocates is 100 comprising of 52 males and 48 females. Age structure indicates that 77 percent of them are economically active with 64 percent literacy and most of them are engaged in agriculture. Distribution of landholding indicates that 11 percent have below 0.2 ha (below 4 ropani) and 89 percent posses more than 0.2 ha of agricultural land. Agricultural production of the families does not satisfy the needs of whole year.

92 percent of households are willing to pay minimum charge of Rs. 80 per month for electricity consumption. Average annual income of relocates is NRs. 67000. Out of which labor and wages contribute 37.1 percent and agriculture contributes 35.1 percent of annual income. *A*griculture, animal husbandry, service, trade and labor & wages are the main sources of income of the affected people. Average annual expenditure pattern shows that 72.5 percent of total expenditure is made for food items and 27.5 percent on non food items.

Study shows that total 11,070 square feet area of houses comprising 81 rooms will be affected by transmission line alignment. Local people estimated that total costs of these houses are 1.8 million Nepalese Rupees. The cost varies between NRs 35,000 and NRs 250,000 per house. The houses were built in between 2036 B.S. (1979) and 2059 B.S. (2002). On an average, each house has 2 storeys. For the relocation of houses, NRs. 4.2 million is allocated and additional NRs 0.16 million is estimated for land replacement cost. Dislocation allowance for 68 months amounts Rs.34000. Total cost of relocation will be NRs. 4.5 million

excluding community support program. 76 percent of the relocates prefer cash compensation considering that such mode of payment will be easy in handling.

Numerous group meetings and in depth interviews carried out during field survey revealed that relocation is possible in nearby existing land and issues related to host community and social services in new site will remain as before (pre project). Consultation with relocates was conducted in various stages and the people are aware of impending challenges. During the project implementation the project will form grievance redress committee to sort out the complains at project level and if needed people may lodge their complains to Ministry of Water Resources (MoWR) and to the civil court.

Before the construction of the project, the relocates will be officially notified to receive the compensation and grants to relocate the affected houses. The construction of project is scheduled from August/September 2006. Relocates will be given replacement cost of house and house plot and dislocation allowance. Khimti-Dalkebar Environment Management Unit(KDTL-EMU) established under the Project will monitor relocation process, housing conditions, standard of living of relocates and may recommend specific measures to be implemented by the project during construction and operation phases.

1.0 INTRODUCTION

The total installed capacity of the Integrated Nepal Power System (INPS) is approximately 614 MW of which 557 is hydropower and rest is thermal energy. To cater present increasing demand of hydro power in Nepal, the new hydropower projects needs to be constructed and the existing capacity of the transmission mechanism needs to be upgraded or new transmission line should be constructed. In view of future system development plan, Nepal Electricity Authority (NEA) proposed Khimti–Dhalkebar 220 kV D/C Transmission Line Project to evacuate the power generated from Tamakoshi River and other potential hydropower projects of this region. This transmission line will also be connected to the two existing Independent Power Producer (IPP) namely Khimti and Bhotekoshi with a view to export power to India as well as to cater the power to the load centers of eastern region of the country. This project is financed by World Bank to meet the objectives of HMG/N in extending access to electricity supply to a larger percentage of the population.

Since the proposed project will be funded under Power Development fund provided by the World Bank the study have to satisfy requirement of "Policy Framework for Environmental Impact Assessment for projects under the Power Development Fund 2002". Considering aforementioned requirement, a separate Social Impact Assessment (SIA) report was prepared focusing on social baseline, impacts, mitigation measures and social monitoring of Khimti-Dalkebar 220 kV transmission line project. World Bank review mission recommended for the preparation of Abbreviated Resettlement Action Plan (ARAP) for 17 houses to be relocated by the project. Although Policy Framework requires Resettlement Action Plan if relocation exceeds 25 houses. The present Abbreviated Resettlement Action Plan (ARAP) study has been undertaken as per the provision made in the ‘’Policy Framework for Environmental Impact Assessment for Projects under the Power Development Fund"2002 and it follows the modalities outlined in the Framework.

The Environmental and Social Studies Department (ESSD) of NEA prepare this report as per the contract signed between Transmission Line/Substation Construction Department and ESSD.

Public hearing program were organized at Manthali of Ramechap district and Dhalkebar of Dhanusha district in order to provide opportunity for the maximum participation of local people and to discuss the findings of the EIA & SIA study and to collect the issues/ concerns of local people on resettlement. The relevant issues raised by local people and representatives of the VDCs and line agencies are incorporated in final EIA & SIA and ARAP report. Nine focus group meetings, indepth interviews and public consultation were organized specially for relocates to explore the issues and concerns related to house relocation.

2.0 STUDY METHODOLOGY

2.1 Desk Study

The desk study includes the review of technical reports of the project, topo maps of 1:25,000 scales, district profiles of affected Districts and VDC profiles. Based on previous experiences and review of relevant literatures associated with this study of various hydropower projects, demographic tables were developed. All relevant information associated with socio-economic and cultural environment were reviewed and entered in the tables. On the basis of the reviewed information, data gaps were identified and the techniques described below were used to generate the remaining data.

2.2 Field Visit

The field investigation was carried out by a multi-disciplinary team of experts, which comprised of Sociologist, Economist, ACRP expert and Surveyor. The fieldwork was conducted in February-March, April-May and October-November and lasted for about 60 days in 2005. Team traversed in project area to collect information on existing socio-economic & cultural environment of the project affected area and affected households. The required baseline information was collected during the field survey by using the following techniques. Collected data were tabulated and analyzed in computer and output tables are presented in the report.

- Questionnaire interviews,
- Checklists,
- Focus group discussions,

Questionnaire Interview

Pre-tested questionnaires were designed and applied by a trained team of enumerators to solicit the information from relocate families. Census survey was conducted for 17 households. Two types of questionnaire were designed and used for the survey. The first questionnaire includes the demographic characteristics, basic health conditions, income and expenditure, the availability of infrastructure facilities, water and energy related issues, information about project, attitude towards settlement and expectations from the project. The second questionnaire consist gender issues which was used in the field survey to analyze the status of woman, their attitude towards the project, the possible impacts on woman due to the implementation of the project and other gender issues. The household questionnaire is given in Annex 1.

Checklist

Key informant survey was also a major survey instrument, which was employed during the field visit to gather information on socio-economic and cultural activities. Two sets of checklists were designed. The VDC level checklist was designed to collect information on basic demographic and migration patterns, food sufficiency and cropping patterns, existence of user's groups/committees, public facilities and infrastructure, labour force availability, existence of archaeological and religious places and existence of disadvantaged groups and ethnic minorities. The agricultural checklist was designed to collect the price rates of various

agricultural products cultivated in the project affected VDCs and Municipality. Both of these checklists are given in Annex 3.

Focus Group Discussion

Group discussions were organized to give special attention to issues concerning specific target groups such as women, children and farmers. The local elite and other knowledgeable persons were also included in the discussion. Other occupational caste groups, ethnic minorities, women and disadvantaged groups were included in the discussion, which gave opportunity for the people in the project area to voice their concerns and ask questions regarding the project. This provided in-depth information associated with their religion, culture, festivals, etc.

3.0 PROJECT DESCRIPTION

To evacuate the power generated from the various planed and proposed hydropower projects in the Tamakoshi basin and to feed the eastern load centers in view of future system development plan; a 73 km long, double circuit, 220 kV Transmission Line Project has been proposed. The proposed transmission line will start from Khimti of Dolakha District and ends to Dhalkabar of Dhanusa District. The proposed transmission line alignment traverse through the Dolakha, Ramechhap, Sindhuli, Mahotari and Dhanusa districts of Eastern Development Region.

For the purpose of the SIA study, the study area is defined as the project area consisting of the right of way, substation area as well as the area that will be impacted due to the construction and operation of the project. The same area is considered as the project area for the ARAP study also. The proposed project will cover 16 VDCs and one Municipality of the five districts.

At present, the project area is accessible up to Manthali of Ramechhap district and Khurkot of Sindhuli district via Puspa Lal Highway and B.P Koirala highway respectively. This road will be used for the construction of proposed T/L Project. A small stretch of the transmission line from Manthali to Khurkot is not connected with road where other means of transportation such as helicopter and porter will be used. For the transportation of the construction material in this stretch local labour will be used from the nearest road head to the construction site. Thus, no access road is required to construct for this project.

The right of way of the proposed project will be 15 meter each side from the centerline and approximately 12.5m x 12.5m area will be required for tower foundation. In most of the areas span of the tower will be 350 meter and in total 230 towers will be constructed in 73 km alignment. The number of angle points is 53 and tower is steel lattice structure, self supported type. The project component also includes extension of two 132 kV line bays, one each at Khimti and Dhalkebar substations. The estimated cost for the proposed project is US$ 22 million, which will be jointly funded by World Bank, HMG/N and NEA.

In order to carry out the project works the entire stretch of the power line route will be segmented into two work sections and will be controlled from two ends. The working group of each section will be more or less mobile; hence small size temporary camp will be constructed for the construction of the project. Altogether 225 people will be employed in the project, which includes 50 skilled, 65 semi skilled and 110 unskilled.

4.0 BASELINE CONDITION OF THE SERIOUSLY PROJECT AFFECTED FAMILIES (SPAFs)

4.1 DEMOGRAPHY

The Power Development fund Guidelines gives relatively more emphasis on Project Affected Families loosing principal residence and these are specified as SPAFs. Therefore, Project Affected Families whose houses are located under the RoW are considered as Seriously Project Affected Families (SPAFs) for this project because these families are treated as relocates. In this project, the total number of houses located under the RoW are 17, thus 17 families are the relocates. Out of these 17 houses; 3 from Ramechhap, 9 from Sindhuli and 5 from Dhanusha Districts (Table 4.1). All of these houses are Kachchi with tiled and thatched roofing. Types of houses are more or less similar and used similar construction and roofing materials.

Table 4.1: Location of Houses in RoW

S.No.	Type of Houses	No. of Houses	Percentage
1	Ramechhap	3	17.64
2	Sindhuli	9	52.94
3	Dhanusha	5	29.42
Total		**17**	**100.00**

Source: Field Survey, 2004.

Census result shows that the total population of SPAFs is 100 with average household size 5.88, which is low in comparison to the average household size of PAFs. The male female ratio is 52 percent and 48 percent respectively (Table 4.2).

Out of the 100 seriously project affected people 17 are in Ramechhap, 59 are in Sindhuli and 24 are in Dhanusha District respectively. Total affected population is dominated by males (Table 4.2). Seventeen Kachchi houses are to be relocated in thirteen places along the transmission corridor of 73 km, which provides 0.23 houses per km of transmission line.

Table 4.2: Census Results of Affected Households

District	VDC	Type of Impact	Male	Female	Total Affected Population
Ramechhap	Khimti	House Relocation	2	3	5
	Manthali	House Relocation	4	2	6
	Bhaluwajore	House Relocation	3	3	6
Sub Total			**9**	**8**	**17**
Sindhuli	Bhadrakali	House Relocation	3	3	6
	Ratanchura	House Relocation	6	6	12
	Kamalamai Municipality	House Relocation	9	10	19
	Ranichuri	House Relocation	11	11	22
Sub Total			**29**	**30**	**59**
Dhanusha	Tulasichauda	House Relocation	11	6	17
	Beghadabar	House Relocation	3	4	7
Sub Total			**14**	**10**	**24**
Total			**52**	**48**	**100**
Number of Households					**17**
Average HH Size					**5.88**

Source: Field Survey, 2004.

4.2 MIGRATION PATTERN

Migration pattern of SPAFs does not differ significantly from PAFs and immigration in to the area is nominal. The major factors which causes the migration of the population from the project affected area are employment and business opportunity in the under construction Banepa- Bardibash Road (B.P. Highway), services and other facilities in near by towns and Kathmandu.

From the field survey, it was found that 53 percentages of the households are the local residents and 41percentage are migrated in to the area more than five years ago. One family migrated within one year (Table 4.3). The population is therefore generally stable, growing with the local birth rate, and the area has not been subjected to significant migration.

Permanent migration from the area is very rare. But temporary migration for work is quite common. There are some precise statistics on labor migration. Outward migration is generally seasonal migration for job seeking in the nearer town and major cities like Kathmandu with the aim of supplementing household income. Few households reported that members of their family migrate for educational purposes and service.

Table 4.3: Migration Pattern of SPAFs

Items	No. of HHs	Percentage of HHs
Local Resident	9	52.94
Migrated Within 1 Year	1	5.88
Migrated Within 5 Years	0	0.00
Migrated More Than 5 Years	7	41.18
Total	17	100.00

Source: Field Survey, 2004.

4.3 AGE STRUCTURE

Age and sex wise population distribution of SPAFs is shown in the Table 4.4. The population below 15 years of age is 15, which is 15 percent of the total population. Out of them 8 is male and 7 are female. On the basis of International Labour Organization (ILO) criteria, economically active SPAFs population is 77, which is 77 percent of the total population. Remaining 8 that are 8 percent of the total population are above 60 years of age. Of the economically active population, 38 are male and 39 are female. From this analysis, it is clear that females are less than males and relocation process may impact children and aged population, which constitutes 23 percent of the total population.

Table 4.4: Population Distribution of SPAF by Age Group and Sex

Age Group	Male	Female	Total	Percentage
Below 10 Years	5	4	9	9.0
10 - 15 Years	3	3	6	6.0
15 - 60 Years	38	39	77	77.0
Above 60 Years	6	2	8	8.0
Total	**52**	**48**	**100**	**100.0**

Source: Field Survey, 2004.

4.4 OCCUPATION

Occupation distribution of SPAFs indicates that most of them (65%) are engaged in agriculture and can be employed only during agricultural season. Of the remaining population, 6 percent are service holders and 18 percent are unable to work. A very few of them reported that their main occupation is business, labor and wages. Occupation pattern shows typical rural characteristics and nearby relocation may not impact their occupation. Details are presented in Table 4.5.

Table 4.5: Occupation Distribution of SPAF by Sex

Occupation	Male	Female	Total	Percentage
Agriculture	27	38	65	65.00
Business	1	0	1	1.00
Service	4	2	6	6.00
Labour and Wages	2	0	2	2.00
Students	5	3	8	8.00
Unable to Work	13	5	18	18.00
Others	0	0	0	0.00
Total	52	48	100	100.00

Source: Field Survey, 2004.

4.5 EDUCATIONAL STATUS

Educational status of Seriously Project Affected Families indicates that 36 percent are illiterate and 64 percent are literate. Of the literate population, 18 percent can only read and write 21 percent have primary level of education, and remaining have secondary level of education. None of them has received higher education. It shows their poor economical status also. Low level of education may prevent them to perform skilled construction activities. Table 4.6 shows disparity regarding educational status among males and females.

Table 4.6: Literacy Status of SPAFs

Population	Illiterate	Literate							Total of All
		Able to Read and Write	Primary	Lower Secondary	Secondary	SLC	Intermediate and Above	Total	
Male	13	9	14	7	5	4	0	39	52
Female	23	9	7	8	1	0	0	25	48
Total	36	18	21	15	6	4	0	64	100
Percentage	36	18	21	15	6	4	0	64	100

Source: Field Survey, 2004

4.6 LANDHOLDING

Analysis of landholding size reveals that most of the holdings are small i.e. less than one hectare consisting of irrigated and unirrigated land. Population pressure on cultivated land has resulted in fragmentation of land holding which may not be sufficient for supporting minimum

needs of the households. The Table 4.7 provides more information on distribution of landholding by SPAFs.

Table 4.7: Distribution of SPAFs by Land Holding Size

Size of Land Holding	Irrigated Land (Khet)			Unirrigated Land (Bari)			Grassland (Kharbari)			Total Land	
	No	Percent	Area (ha)	No.	Percent	Area (ha)	No.	Percent	Area (ha)	Area (ha)	Percent
Holding without land	9	52.94	0.00	2	11.76	0.00	14	82.35	0.00	0.00	0.00
Less than 0.1 ha	2	11.76	0.03	3	17.65	0.17	0	0.00	0.00	0.20	2.15
0.1 – 0.2 ha	1	5.88	0.15	3	17.65	0.40	3	17.65	0.31	0.86	9.14
0.2 – 0.5 ha	3	17.65	1.02	5	29.41	1.51	0	0.00	0.00	2.53	27.04
0.5 – 1.0 ha	0	0.00	0.00	4	23.53	3.30	0	0.00	0.00	3.30	35.25
Greater than 1 ha	2	11.76	2.47	0	0.00	0.00	0	0.00	0.00	2.47	26.43
Total	17	100.00	3.68	17	100.00	5.38	17	100.00	0.31	9.36	100.00

Source: Field Survey, 2004

4.7 AGRICULTURE

Area allocation for different major crops and their productivity is presented in the Table 4.8. The main crops are paddy, wheat, maize, millet and pulses. Areas covered by the crops include irrigated and unirrigated lands and productivity differs according to the type of land. The Table 4.8 illustrates average productivity of major crops.

Table 4.8: Agricultural Practices and Production by SPAFs

Types of Product	Paddy	Wheat	Maize	Millet	Pulses	Potatoes	Mustard
Total Area (sqm)	43718.48	23974.63	67883.22	32514.66	22887.53	9215.72	16707.33
Khet (sqm)	36769.01	20307.63	20667.11	2422.46	0	243.76	13891.01
Bari (sqm)	6949.47	3667	47216.11	30092.2	22887.53	8971.96	2816.32
Production (kg)	13150	2450	4750	2775	19	300	600
Yield (ton/ha)	3.01	1.02	0.70	0.85	0.01	0.33	0.36

Source: Field Survey, 2004

4.8 LIVESTOCK

Livestock rearing is an important aspect of rural economy and SPAFs activities, which provides cash income and products for home consumption. The field survey provides data regarding number of livestock unit and average milk production by buffaloes. The average number of cattle, buffalo, goats and sheep per household are 2.1, 1.1 and 3.6 respectively. The details are presented in following Table 4.9.

Table 4.9: Livestock Possession by SPAFs

S. No.	Type of Livestocks	Numbers	Percentage of S. No. 1 and 2	Percentage of Total	Milk/Month (Liter)	Average Milk/Month (Liter)
1	Cattle	36	100.00			
	Male	24	66.67	13.48		
	Female	12	33.33	6.74		
	Milking	0	0.00	0.00	0.00	0.00
2	Buffalo	19	100.00			
	Male	3	15.79	1.69		
	Female	8	42.11	4.49		
	Milking	8	42.11	4.49	360.00	5.07
3	Goats and Sheep	61		34.27		
4	Pigs	3		1.69		
5	Hen and Duck	59		33.15		
Total		**178**		**100.00**	**360.00**	**5.07**

Source: Field Survey, 2004.

4.9 FOOD SUFFICIENCY

Reported information about food sufficiency among SPAFs of project area reveals chronic malnutrition and deficit in calorie intake. Agricultural production of the families does not satisfy the needs for whole year. Families with sufficient food for 9-12 months account 35.29 percent and for 6-9 month constitute 41.18 percent. About 17.65 percent of households survive with food sufficiency of less than three months. The food deficit is normally covered by purchases or by earning from labor and wages. The details are tabulated in the Table 4.10.

Table 4.10: Food Sufficiency of SPAFs

Sufficient for Months	No. of HHs	Percentage of HHs
12	0	0.00
9 – 12	6	35.29
6 – 9	7	41.18
3 – 6	1	5.88
Less than 3	3	17.65
Total	**17**	**100.00**

Source: Field Survey, 2004

4.10 ENERGY

Field data regarding energy sources for lighting and cooking reveal that firewood, kerosene and electricity are the primary energy contributors. All of the households use firewood for cooking and some use firewood for lighting also. Most of them (82.35%) use kerosene for lighting purposes. Only 11.76 percent of households use electricity for lighting. It appears that traditional energy sources are being replaced by commercial energy for lighting purpose and this trend will continue in future. The details of energy used by SPAFs are given in the Table 4.11.

Table 4.11: Energy Use and Source for Lighting and Cooking by SPAFs

Source of Energy	Use of Energy			
	Lighting		Cooking	
	No. of HHs	Percentage	No. of HHs	Percentage
Firewood	1	5.88	17	100.00
Kerosene	14	82.35	0	0.00
Electricity	2	11.76	0	0.00
Others	0	0.00	0	0.00
Total	17	100.00	17	100.00

Source: Field Survey, 2004.

4.11 AFFORDABILITY

Affordability of households for electricity is influenced by low cash income levels in rural area. As a result most of the SPAFs (91.67 %) are willing to pay minimum charges. From the Table 4.12 it is clear that only one family is willing to pay NRs 650 for electricity charges, which are an exception, and 5 households did not replied at all. The data show that affordability and energy consumption in project area is expected to be low and electricity will be primarily used for lighting purpose only.

Table 4.12: Willingness to Pay for Electricity by SPAF

Willingness to Pay (NRs)	No. of HHs	% of HHs
80	11	91.67
650	1	8.33
Above 650	0	0.00
Total	**12**	**100.00**

Source: Field Survey, 2004.

4.12 SOURCES OF DRINKING WATER

Sources of drinking water identified by the survey suggest that most of the households (64.71%) use piped water supply where as 35.29 percentage of households use water from well. Water from river/spring was not being used. Possibility of infection by water borne/related diseases still exists in the area and water supply for construction crew may be an issue. Pressure on local water supply should be minimized. The sources of drinking water and percentage of users of SPAFs are given in the Table 4.13.

Table 4.13: Sources of Drinking Water and Percentage of Users of SPAFs

Source	No. of HHs	Percent
River / Spring	0	0.00
Well	6	35.29
Pipe	11	64.71
Total	**17**	**100.00**

Source: Field Survey, 2004.

4.13 SOURCES OF FIREWOOD COLLECTION

Inquiry regarding sources of firewood collection (Table 4.14) revealed that most of the households (70.59 %) collect firewood from community forest, which is managed in sustainable principle. Government forest is a source of firewood for 17.65 percentage of

families. Only 11.76 percentages of households uses the private forests for the sources of firewood. Firewood collection for cooking may be problematic in the absence of government forest.

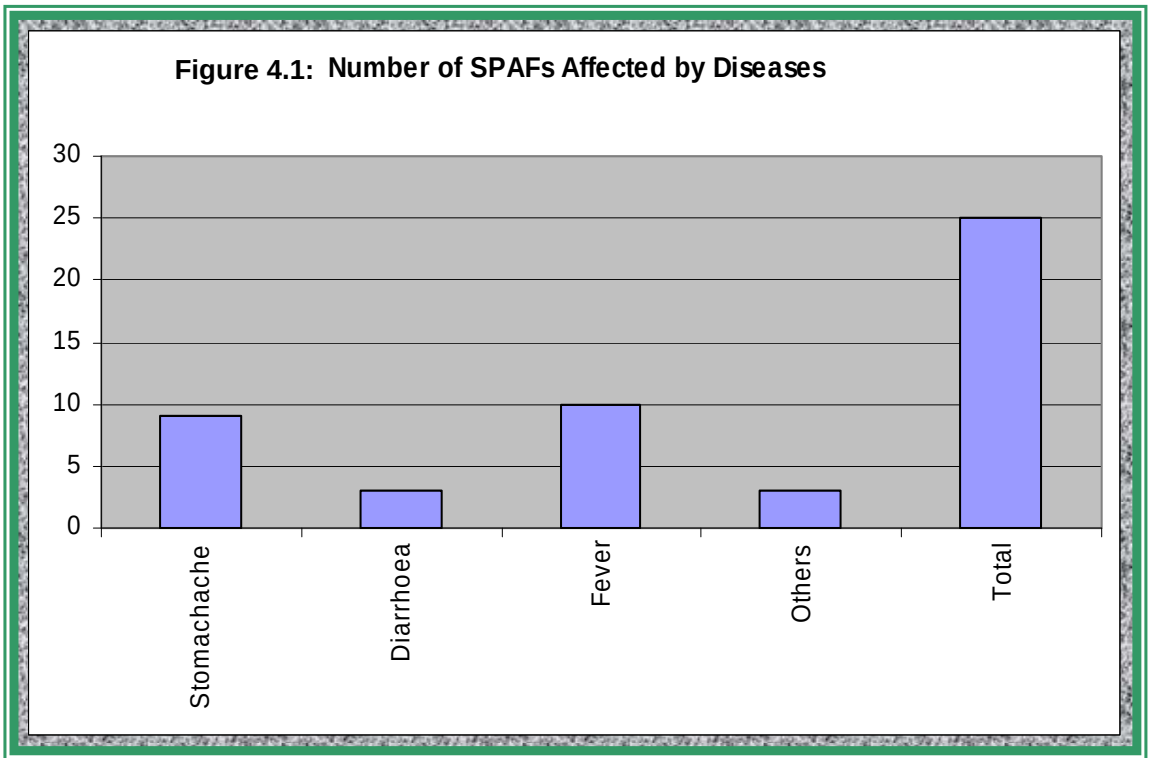
Table 4.14: Sources of Firewood Collected by SPAFs

Source	No. of HHs	% of HHs
Government Forest	3	17.65
Private Forest	2	11.76
Community Forest	12	70.59
Purchase	0	0.00
Others	0	0.00
Total	**17**	**100.00**

Source: Field Survey, 2004.

4.14 HEALTH AND SANITATION

Health facilities in project area are inadequate and main diseases prevalent in the SPA families are stomachache, diarrhea, fever and others (Fig 4.1). No serious disease was found in the 17 households to be relocated by the project.



Methods of treatment indicate that in most cases patients consult health post, private clinics and pharmacy. Local baidya and dhami/jhakri also contribute to patient's treatment in a limited scale.

4.15 INCOME AND EXPENDITURE

Average annual income of SPAFs consists of agriculture and animal husbandry, service, trade, cottage industries, labor and wages and professional services. The share of agriculture

in household income is about 35 percent, which is under reported. Labor and wages contribute 37.09 percent of annual average income. Agriculture and animal husbandry placed second and contributes 35.1 percent. The share of services in annual average income is 16.27 percent and that of cottage industries is 6.92 percent. Trade has the lowest contribution consisting of 2.31 percent. Table 4.15 shows that annual average income per household is Rs.67351 and per capita income constitutes Rs.10774.

Table 4.15: Annual Average Income of SPAFs

Income Source	Average Amount (NRs)	Percentage of Average Annual
Agriculture and Animal Husbandry	23640	35.10
Service	10958	16.27
Trade	1556	2.31
Cottage Industries	4661	6.92
Labour and Wages	24980	37.09
Professional Services	1556	2.31
Others	0.00	0.00
Total	67351	100.00

Source: Field Survey, 2004.

Expenditure pattern of SPAFs presented in following Table 4.16 shows that 72.5 percent of total expenses are made for food, which demonstrates consumer behavior of households. Share of energy and clothing is 9.95 percent and 6.7 percent respectively. Contribution of education and medicine is almost equal and constitutes 4.69 percent and 4.4 percent of annual expenditure. Annual average household expenditure is estimated to be Rs. 60774. In per capita terms, it is equal to Rs. 10336.

Table 4.16: Annual Average Expenditure of SPAFs

Expenditure Items	Average Amount (NRs)	Percent of Average Amount
Food	44067	72.51
Energy	6047	9.95
Medicine	2676	4.4
Education	2853	4.69
Clothing	4070	6.7
Others	1059	1.74
Total	**60774**	**100.00**

Source: Field Survey, 2004.

5.0 VULNERABLE GROUP

The field survey carried out for relocates identified three households representing vulnerable group: two lower caste (Dalits) households and a female headed household. During the field survey these households were interviewed. Inquiry revealed that total population of this group is 15 including 6 males and 9 females and are located in Kamalamai Municipality and Begadabar VDC. The total estimated cost of impacted houses is NRs. 245,000.

The economy of these households is subsistence in nature and is self employed. The field survey shows that all the 17 households affected by relocation of houses have formal registered land (land registered in the name of people). The Entitlement Policy Matrix of EIA/SIA Policy Framework will be considered for determination of entitlement of loss of land and houses.

Article -13 and 16 of the Act relates to creation of a Compensation Fixation Committee. The committee will be formed under the chairmanship of Chief District Officer of the concerned district and includes chairman of affected VDCs, representative of affected people, representative of the District Development Committee, representative of land revenue office and representative of Khimti-Dhalkebar 220 kV Transmission Line Project. The primary duty of the Committee is to fix compensation rates.

The Project will follow Policy Framework for Environmental Impact Assessment for Projects Under the power development Fund, 2002 underlines the need for Grievance Redress Committee and Compensation Fixation Committee, which will be formed to undertake the respective responsibilities. The "Policy Framework for Project under the Power Development Fund" provides guidelines for acquisition and compensation of this Project. Compensation will be paid as per the Entitlement Policy Matrix of EIA/SIA Policy Framework.

The main impact of the project on the group is house relocation in nearby land. Two Dalit households can relocate the houses as required by providing compensation and grants. The female headed household is lonely and requires help in relocation arrangement including in house plot purchase and construction of house. As reported local people can support in relocation to some extent but overall responsibility lies with the house owner.

It should be noted that distant relocation may disrupt the traditional social ties of the family and may impact livelihood. Relocation in nearby area is preferable to maintain socio-economic linkage with the host community which will enable them to use the existing property, infrastructure, culture and traditions.

The survey team interviewed each of the households twice and issues raised during the public meeting were noted. The main issues raised by the SPAFs are: appropriate compensation for the house, free reuse of construction materials and assistance in purchasing house plot for relocation. Since houses are to be compensated at replacement cost and construction materials from old house is to be given to house owner free of cost their first two issues were satisfactorily answered. Regarding assistance in relocation project will assist to those households who need support.

As other households, the vulnerable group is also entitled to receive compensation for houses, house plot value equivalent to area covered by the house, dislocation allowance and benefits from community support program. Present information suggests that special mitigation program for this group is not needed but assistance is sought for relocation. However, careful attention to the needs of these families during the transitional period is required.

6.0 RELOCATION OF HOUSES

Seventeen houses are likely to be affected due to implementation of the project, which include 9 in Sindhuli, 3 in Ramechhap and 5 in Dhanusha Districts (Table 4.1). A typical house to be relocated in Sindhuli District is shown in the Figure 6.1. Out of the total affected houses 9 houses have tiled shaded and 8 with thatched roof. Of the total, 7 houses are double story and 10 are single story. Eight VDC and one municipality will be affected by the house relocation (Table 6.1).

About 100 people will be affected by house relocation. The age structure indicates that the stress caused by relocation may not be crucial for economically active group, which is supposed to be active participant of project construction.

Table 6.1: Houses Affected in Different Part of the Project Area

District	VDC	Ward No/Settlement	Type Kachhi	Story	Roof type
Ramechhap	Khimti	Khatri tole -6	1	2	Thatch
	Manthali	Dahal Guan-6	1	2	Thatch
	Bhaluwajore	Lisanpani-1	1	2	Thatch
Sindhuli	Bhadrakali	Mudekhrka	1	1	Thatch
	Ratanchura	Ward-2	1	1	Thatch
	Ratanchura	Ward-2	1	2	Thatch
	Kamalamai Municipality	Sano Karkare	1	1	Thatch
	Kamalamai Municipality	Karkare	1	2	Tile
	Kamalamai Municipality	Thukitar	1	1	Thatch
	Ranichuri	Bhuttaya-Khatyar	3	2	Tile
Dhanusha	Tulasichauda	Ram Chandra Tole -2	3	2	Tile
	Beghadabar	Ward-4	1	1	Tile
	Beghadabar	Ward-4	1	2	Tile
Total			**17**		

Source: Field Survey, 2004.

The Entitlement Matrix (Table 6.2) shows types of impact, number of affected households, entitlement, amount of compensation and responsible agency.

The transmission line crosses one block of the school building and toilet of Tamakoshi Higher Secondary School at Khimti Besi of Khimti VDC. For the relocation of school block and toilet appropriate compensation is allocated in Table 6.2.

Table 6.2: Entitlement Matrix

S.N	Type of Loss / Impacts	Number of households impacted	Entitlement	Value of Compensation (Rs.)	Responsible Organization
1.	Loss of land occupied by residential houses	17	Land owner, a person with landowner certificate	132638	The Project
2.	Loss of houses	17	Owners with certificate	3 million	The Project

3.	Loss of school block, toilet	1	House owner, school	1.23 million	The Project

Source: Field Survey, 2004.

6.1 COMPENSATION FOR RELOCATION OF HOUSES

The project will provide appropriate compensation for the houses and land area occupied by the house likely to be affected by the project. Houses will be compensated at replacement cost. The affected households will be allowed to use the construction material from their own dismantled houses. Besides, compensation rental allowances for the 4 months will be paid to each household. It is expected that new houses will be constructed within that period. To determine the compensation rate group meeting were conducted with affected people at the various locations. One typical example of group meeting is shown in the Figure 6.2.

Discussion with the affected people reveals that people are not ready to resettle out side the area and able to manage in nearby areas of land. Resettlement is not applicable for this project because the number of houses to be affected by the project is low and scattered in 9 VDCs of 3 districts.

Table 6.3: Compensation and Other Assistance for the Relocation of Houses

S.No	Compensation	Unit Rate (NRs.)	No of Affected House	Amount
1	**Types of Houses**			
	Kachi house with tiled roof	200000	9	1800000
	Kachi house with thatched roof	150000	8	1200000
	School block having paki house with tin shade	1200000	1	1200000
	Construction of school toilet	LS	1	50000
Sub- Total				**42,50,000**
2	**Land Replacement Cost**			
	Land replacement cost for houses	491250/ha	0.27 ha	132637.5
	Land replacement cost for school	600000/ha	0.050ha	30000
Sub- Total				**162637.5**
3	House Rental Allowance for 4 months	500/month	68 months	**34000**
Grand Total				**44,46,637.5**

Source: Calculated on the Basis of Field Survey Data, 2004.

The project will also compensate for the construction of one block of school building and toilet of Tamakoshi Higher Secondary School since the alignment passes over them. Due care has to be given to school going aged population while relocation of houses. The detail of compensation rate and amount for the house loss is presented in Table 6.3.

6.2 VALUATION OF ASSETS

Preliminary valuation of relocates assets: homestead and house was done based on replies of the relocate which is reflected in cost estimates. Houses and Homestead are evaluated at replacement value considering construction materials used. During the construction a

valuation committee with specific mandate will be formed by the project to determine more exact value of assets. Considering time lag between this study and construction, the evaluation of the Committee will be more appropriate basis for compensation and relocates will be compensated as per recommendation of valuation committee at replacement cost.

Reported information suggests that total 11070 square feet area of houses comprising 81 rooms will be affected. Local people estimated that total costs of these houses are Rs. 1.8 million without depreciation. The costs vary in between Rs 35000 and Rs 250000 per house. The houses were built in between 2036 B.S. (1979) and 2059 B.S.(2002). On the average each house has 2 storeys. (Details are presented in Annex-2)

6.3 PREFERENCE OF COMPENSATION

SPAFs preference for compensation indicates that 76.5 percent of households prefer cash compensation and 11.7 percent prefer replacement houses. Some households raised the question of house plots also. As a whole most of households are satisfied by cash compensation considering easy handling of cash for different purposes.

Table 6.4: Preference of Compensation of SPAFs

Types of Compensation	No. of HHs	Percentage of HHs
Cash	13	76.47
Land for Land	1	5.88
House for House	2	11.76
Others	1	5.88
Total	**17**	**100.00**

Source: Field Survey, 2004.

7.0 IDENTIFICATION OF RELOCATION SITES

Seventeen houses to be relocated are scattered along the 73 km right of way of transmission line and single site for the relocation of all households is not possible. During the survey each relocate was consulted to explore the possibilities of relocation sites. Almost all households replied that the new house will be built in their own land, few meters away by using almost same construction materials. Relocates were not in favor of separation of cultivated land and house. Within their land they themselves locate the place for new house construction and the Project will facilitate in construction and dislocation. In one case, in Begadawar the relocate has only homestead and relocation is possible by purchasing new land. However land are available in near by areas and can be purchase within the amount paid by the project as compensation. Project will facilitate for the relocation of the concerned people. As households are relocating in the same area social services for relocates will be same as before the relocation. Socio-cultural relations with host communities will be unchanged. It will minimize socio-cultural disruption and hardships of relocation.

7.1 CONSULTATION WITH DISPLACED PEOPLE

At first, the relocates were consulted during the survey of the alignment. During questionnaire, survey each and every household was contacted and answers of ten page questionnaire regarding their socio-economic status was sought. At this point relocates were explained legal and policy implications of their entitlement, procedures of acquisition and compensation, complain redress procedures and possibilities of rehabilitation grants. Question-answer made them to understand the Project issues more thoroughly. Group meetings, interactions and interviews of knowledgeable persons were organized in different places to determine issues and concerns of impacted households.

The relocates were further consulted during public consultation meetings held at Manthali and Dalkebar as a part of EIA process. Issues raised by them including compensation and grants were answered by Project Manager and other senior officials of NEA. A Projects booklet outlining basic policy guidelines on social and environmental aspect was distributed to the Project affected families.

A site visit was especially organized to look at the issues and concerns of relocates and a supplementary checklist entirely related to house relocation with 16 questions was administered among them. The questions were related to demography, education, landholding, income source, assets and house relocation issues. The checklist survey was aimed to refine previous information and to collect more relevant information. All the affected households answered the checklist and conducted an open discussion. During this visit on the spot consultation was held and main issues of particular household were noted down. The common issues raised were fair compensation of houses, possible assistance from NEA and possibility of use of construction material of old houses. A open question and answer session was also conducted and the team responded on the wide ranging questions of impacted households.

The team organized nine focus group meetings at Ramchandra Tole, Dhamsar, Majhitar, Panitanki, Dadakhark,Khimti, and other places of transmission line alignment impacted by house relocation and conducted structured interviews in different places which were helpful in issues identification and explaining relocation issues as well. A fair compensation for houses was the main issue raised during the meetings. The meeting expressed satisfaction over rehabilitation grants. The records of these meetings are given in Annex 4. Figure 7.1 shows an example of group meeting at Ramachap District.

Further consultation is planned during Project construction and operation. Khimti-Dalkebar Environment Management unit (KDTL-EMU) will periodically organize focus group discussion, interactions and structured interviews and will maintain records of such meetings and discussions. Any important issues arising in the meetings shall be reported to Project management to ensure its proper implementation. KDTL-EMU will
prepare quarterly report which will include issues of relocation also. Possibility of participation by NGOs and VDCs office bearers in the area should be explored and if possible their active participation in group discussions and interactions during operational phase of the Project is required.

7.2 PROCEDURE FOR GRIEVANCE REDRESSAL

The Project will create a Grievance Redress Committee (GRC) to address complains and grievances pertaining to resettlement and social development and to pre-empt all disagreements being referred to the court.

The committee will involve administrative officer from the Project, representative of local government bodies and representative of local affected persons nominated by themselves. Administrative officer will act as member secretary. The committee will adopt an internal working procedure for grievance handling which should be endorsed by Project Manager.

Anyone can file the complain with member secretary. Grievances recorded by the member secretary in grievance register will be discussed at the meeting and appropriate decision is taken. A signed minute of meetings will be essential for the meeting. The filing of complains and proceedings of meeting will be well recorded by member secretary and will be transparent. Meetings of the committee will be held at regular intervals or as and when necessary. If needed the committee will seek the advice of technical and other experts in specific circumstances. Technical and/or other expert(s) may attend the meeting to recommend appropriate advice on particular issues.

Amicable settlement between the PAFs/SPAFs and the promoter will be first attempted at the Project level. If this attempt fails, the case may be brought by either party to MoWR, if necessary. If no resolution is arrived at, PAFs/SPAFs or promoter may involve elected representatives to attempt conciliation.

If the case is not resolved at this level, the case may be referred to the civil court. The decision of the civil court will be binding to either parties.

7.3 INSTITUTIONAL ARRANGEMENT

The overall responsibility of house relocation lies with Nepal Electricity Authority and the Khimti-Dalkebar 220 kV Transmission Line Project the executing agency. The Project evaluates assets and provides compensation and rehabilitation grants, assists in relocation of houses and decides regarding relocatee's complains.

Environmental and Social Studies Department (ESSD) of NEA is responsible for overall control of Environment Management Program. ESSD will work in close coordination with the Project Manager and chief of the KDTL-EMU.ESSD shall take the responsibility of environment management for the first two years of operation and maintenance of the Project. This Department will work on behalf of the Grid Operation Department which is responsible for operation phase of the Project.

Prior to project construction NEA shall establish Khimti-Dalkebar Environmental Management Unit (KDTL-EMU) and appoint required staff and provide logistics to efficiently conduct social and environmental monitoring and mitigation management of the project. Proposed Khimti-Dalkebar Environmental Management Unit (KDTL-EMU) comprising of social scientists and field staff will also be responsible for facilitating relocation process and monitor baseline conditions, suggest to the management specific mitigation measures and monitor allocation of compensation and rehabilitation grants in timely and effective manner. It shall conduct group meeting, discussions and interaction among relocates. KDTL-EMU shall maintain all records regarding relocation including minutes of meetings, records of discussions and interactions. It shall prepare quarterly and annual reports during construction. Similarly ESSD shall prepare annual report for at least two year of operation which shall include issues related to relocation. The reports shall be distributed among line agencies also. The reporting procedure of KDTL-EMU is presented in Annex 5.

7.4 MEASURES FOR IMPROVEMENTS OR RESTORATION OF LIVELIHOODS

Apart from compensation, value of house plot and dislocation allowances for four months will be provided to the relocates and they are focus group in community support program which should be further designed and refined in consultation with stakeholders and local people. The basic principle of the program implementation is the local participation, contribution and support the economically disadvantageous group. A total of Rs 2.5 million is allocated for this purpose. Presently specialized training in cash crop production, livestock raising and poultry farming is proposed to improve the agricultural production of relocates.

These measures will contribute to improve the living standard of affected populace. During the Project construction Khimti-Dalkebar Environment Management Unit (KDTL-EMU) should analyze the possibilities to adopt more specific income restoration measures and which should be implemented by the Project.

7.5 SCHEDULES FOR IMPLEMENTATION

The implementation period of the project is estimated to cover a period of 30 months, which include 12 months preparatory work and 18 months construction. Small groups of labors will be involved in excavation, concreting, tower materials transportation, tower erection, stringing in and around each tower spread along the power line route. In order to carry out the project works the entire stretch of the power line route will be segmented into two work sections (50 people at each end) and will be controlled from two ends. The work section at each end will be divided in two groups and each group will have 25 people. The working group of each section will be more or less mobile; hence temporary camp will be constructed and each camp has 2 toilets.

The extension of line bay works will be carried out within the existing substations of Kirne and Dhalkebar. The detail of construction schedule for transmission line is given in Annex 6.

The construction schedule includes six month time period starting from August/September 2006 for procurement of RoW and in this period compensation of houses will be given and relocation process will proceed. New house construction will take approximately 4 months.
The main tasks will include publication of notice in national newspaper, evaluation of houses and structures, compensation and rehabilitation grant distribution. Relocation of notified houses will start by exact identifying relocation site, dismantling the old house, construction of new house and resettlement in new house. The Project and Environment Management Unit (KDTL-EMU) will facilitate the relocation process from its initial stage and monitor relocates. Grievances and issues, if any, will be sorted out by the Project.

7.6 COST ESTIMATE

The cost estimate indicates that house compensation is Rs 4.25 million. Land replacement cost are Rs. 0.16 million and house rent is estimated to be Rs. 34000. On the average per family costs are estimated to be Rs.2611567 excluding benefits from community support program. Details of cost break down are given Table 7.1.

Table 7.1: Summary of Costs Estimate

S.N.	Items	Amount Rs.
1	Compensation	42,50,000
2	Land replacement cost	162637.5
3	House rent(Dislocation Allowance)	34000
4	Community support Program (if applicable)	2,500,000
Total		**44,46,637.5 (Say 4.5 Million)**

8.0 MONITORING AND EVALUATION

The process of monitoring and evaluation refers to assessment of the functioning of the Project in the context of set objectives. It is process of data collection to evaluate the progress in project implementation, shortcomings and recommends remedial actions to be implemented by the Project.

Normally socio-economic and impact evaluation of the resettlers will be conducted during project construction by the KDTL-EMU. The main parameters to be monitored are:

- Socio-economic status
- Standard of living
- Status of compensation, rehabilitation grants payment
- Comparison of pre and post housing conditions
- Facilities in new housing area
- Others(impact of resettlement)
- Any outstanding issues

The monitoring reports of KDTL-EMU will be submitted to Project Director in a quarterly basis.

External monitoring will be conducted by VDCs and NGOs working in that area in annual basis. An independent evaluation of resettlement program will be done after project completion in association with experts from MOWR and report will be submitted to Project Director with recommendations regarding corrective measures. The study will recommend whether monitoring of the resettlers will be required during operational phase of the Project.

9.0 CONCLUSION AND RECOMMENDATION

Relocation of 17 houses in nearby area is possible and feasible by providing compensation at replacement cost, land replacement values and dislocation allowance(House rent). Relocation of in nearby area with same host population and social services without causing additional stress on services makes the proposal more attractive. In this context socio-cultural issues with host population do not appear. On the average each household will receive Rs.264700 excluding benefits from community support program. Adverse impacts are minimized through fair compensation and rehabilitation grants.

Compensation Fixation and Grievances redress Committees will be established within the Project to address the issues of compensation and grievances of relocates. It is recommended that Khimti-Dalkebar Environment Management Unit (KDTL-EMU) will monitor the relocates and facilitate smooth relocation. Special attention should be given to vulnerable group. It will also regularly conduct consultation with relocates, will maintain records of consultations and furnish quarterly report to the Management. Any issues arising during and after relocation should be brought to the notice of Project management and appropriate decisions should be implemented timely and effectively.