



REPORT
ON
**THE BASIC STUDY OF RURAL DEVELOPMENT
IN THE PROPOSED BANEPA - SINDHULI ROAD
CORRIDOR**

VOLUME II

ANNEXES

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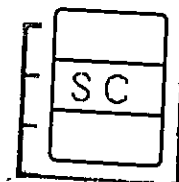


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LIST OF ANNEXES

ANNEX 1: Tables of In-depth Household Studies

ANNEX 2: Poverty Alleviation Efforts in Nepal

by: Dr. Narayan Narsing Khatri

ANNEX 3: Women in Development with Special Reference to the Area Surrounding the Proposed Banepa-Sindhuli Road Corridor

by: Mrs. Padma Mathema

ANNEX 4: Environment and Forest Conservation in Nepal with Special Reference to the Area Surrounding the Proposed Banepa-Sindhuli Road Corridor

by: Mr. Shushil Bhattarai

A N N E X 1

TABLES OF IN-DEPTH HOUSEHOLD STUDY

List of Tables

- Table 1: Household distribution by caste/ethnic groups
- Table 2: Household population distribution by caste/ethnic group
- Table 3: Age categories of sample population
- Table 4: Extent of food scarcity by sample household by villages
- Table 5: Distribution of households by caste/ethnic groups and economic status
- Table 6: Main occupation of population aged 10 years & above
- Table 7: Secondary occupation of population aged 10 year & above
- Table 8: Average size of cultivated land owned, rented in and rented out in sample households
- Table 9: Average size of khet and bari land owned
- Table 10: Average land ownership by economic groups
- Table 11: Average area under different crops under local and improved seeds
- Table 12: Percentage distribution of households using modern inputs in paddy crop in sample villages
- Table 13: Average yield in kg under different crops
- Table 14: Average number of livestock and poultry birds in sample households
- Table 15: Average no. of livestock owned by households by economic status
- Table 16: Average number of fruit trees in sample households
- Table 17: Average no. of fruit trees by economic status
- Table 18: No. and percentage distribution of sample households engaged in non-farm production by products
- Table 19: Percentage distribution of seasonally migrating population by purpose and destination
- Table 20: Average cash income of households by source in sample villages

- Table 21: Average cash income of households by source and economic status
- Table 22: Average amount of borrowing from institutional source and money lenders by no. of borrowers within parentheses for each village seperately
- Table 23: Average amount of borrowing from institutional sources and money lenders by number of borrowers within parentheses for all VDCs together
- Table 24: Average amount per borrower by sources of borrowing in sample villages
- Table 25: Average amount per borrower by sources of borrowing by economic status
- Table 26: Literacy status of sample population (6 years and above) by gender
- Table 27: Literacy status of the sample population (6 years and above) by caste/ethnic groups
- Table 28: Literacy status of sample population (6 years and above) by economic status
- Table 29: Educational attainment by percentage of sample population (11 years and above)
- Table 30: Educational attainment by caste/ethnic status (11 years and above)
- Table 31: Educational attainment by economic status (11 years and above)
- Table 32: Percentage distribution of school enrollment by school-going age, gender and economic status
- Table 33: Percentage distribution of school enrollment by school-going age, gender, and economic status by caste/ethnic group
- Table 34: Percentage distribution of households by source of drinking water
- Table 35: Percentage of households reporting access to different sources of treatment in the last twelve months
- Table 36: Percentage of households with/without latrine in sample villages

LIST OF TABLESTable 1

Household Distribution by Caste/Ethnic Groups

VDCs	Jalkanya (n=50)	Sitalpati (n=50)	Rakathum (n=50)	Mangaltar (n=50)	Katunjabesi (n=50)	Khanalthok (n=50)	Total (n=300)
Bhraman	20.0	14.0	-	32.0	42.0	30.0	23.0
Chhetri	-	12.0	-	-	4.0	16.0	5.3
Newar	2.0	-	94.0	28.0	42.0	38.0	34.0
Tamang	58.0	2.0	2.0	38.0	6.0	6.0	18.7
Gurung	2.0	4.0	2.0	-	-	4.0	2.0
Magar	-	-	-	-	-	6.0	1.0
Bhujel	-	32.0	-	-	2.0	-	5.7
Majhi	-	20.0	2.0	2.0	-	-	4.0
Untouchable	18.0	16.0	-	-	4.0	-	6.9

Table 2

Household Population Distribution by Caste/Ethnic Groups

VDCs	Jalkanya (n=324)	Sitalpati (n=365)	Rakathum (n=334)	Mangaltar (n=416)	Katunjabesi (n=368)	Khanalthok (n=379)	Total (n=2186)
Bhraman	86	52	-	111	181	112	542
Chhetri	-	41	-	-	10	50	101
Newar	6	-	311	131	125	158	731
Tamang	166	8	6	168	40	25	413
Gurung	6	21	9	-	-	13	49
Magar	-	-	-	-	-	21	21
Bhujel	-	111	-	-	3	-	114
Majhi	-	94	8	6	-	-	108
Untouchable	60	38	-	-	9	-	107

Table 3

Age Categories of Sample Population

VDCs	Total Population	0-5			6-15			15-59			60+		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Jalkanya	324	10.5	8.3	18.5	10.2	15.7	25.9	25.6	24.1	49.7	3.1	2.5	5.6
Sitalpati	365	11.8	10.1	21.9	11.8	10.4	22.2	23.8	25.2	49.0	3.6	3.3	6.8
Rakathum	334	7.8	5.7	13.5	12.0	14.7	26.6	27.2	26.0	53.3	2.1	4.5	6.6
Mangaltar	416	7.2	7.2	14.4	14.9	15.1	30.0	26.0	25.0	51.0	2.4	2.2	4.6
Katunjabesi	368	6.0	8.7	14.7	15.5	16.8	32.3	23.6	23.4	47.0	2.7	3.3	6.0
Khanalthok	379	7.1	7.9	15.0	15.3	15.0	30.3	23.5	24.0	47.5	4.2	2.9	7.1
All	2186	8.3	8.0	16.3	13.4	14.6	28.0	24.9	24.6	49.5	3.0	3.1	6.1

Table 4

Extent of Food Scarcity in Sample Households by Villages

VDCs	Groups				
	Marginal (n=51)	Small (n=69)	Medium (n=41)	Large (n=139)	Total (n=300)
Jalkanya	17.6	31.9	19.5	7.9	16.7
Sitalpati	21.6	40.6	4.9	6.5	16.7
Rakathum	21.6	4.3	17.0	20.9	16.7
Mangaltar	25.5	-	19.5	20.9	16.7
Katunjabesi	5.9	11.6	31.8	18.7	16.7
Khanalthok	7.8	11.6	7.3	25.2	16.7
All	17.0	23.0	13.7	46.3	100.0

Marginal = 7 + months Small = 4 - 6 months
 Medium = 1 - 3 months Large = 0 or minus months

Table 5

Distribution of Households by Caste/Ethnic Clusters & Economic Status

VDC	Caste/ Ethnic Group	Marginal	Small	Medium	Large	Total
		n=9	n=22	n=8	n=11	n=50
VDC 1	1	-	22.7	-	45.5	20.0
	2	11.1	-	-	-	2.0
	3	55.6	68.2	62.5	45.5	60.0
	4	33.3	9.1	37.5	9.1	18.0
VDC 2		n=11	n=28	n=2	n=9	n=50
	1	-	21.4	50.0	66.7	26.0
	2	-	-	-	-	-
	3	-	10.7	-	-	6.0
	4	100.0	67.9	50.0	33.3	68.0

	Marginal n=11	Small n=3	Medium n=7	Large n=29	Total n=50
VDC 3					
1	-	-	-	-	-
2	90.9	66.7	85.7	100.0	94.0
3	9.1	33.3	-	-	4.0
4	-	-	14.3	-	2.1
VDC 4	n=13		n=8	n=29	n=50
1	-	-	50.0	41.4	32.0
2	-	-	25.0	41.4	28.0
3	100.0	-	25.0	13.8	38.0
4	-	-	-	3.4	2.0
VDC 5	n=3	n=8	n=13	n=26	n=50
1	33.3	25.0	23.1	65.0	46.0
2	66.7	62.5	53.8	26.9	42.0
3	-	-	7.7	7.7	6.0
4	-	12.5	15.4	-	6.0
VDC 6	n=4	n=8	n=3	n=35	n=50
1	-	50.0	33.3	51.4	46.0
2	-	12.5	66.7	45.7	38.0
3	100.0	37.5	-	2.9	16.0
4	-	-	-	-	-

Cumulative tabulation: % parentheses

1.	1 (1.2) (2.0)	17 (20.0) (24.6)	9 (10.6) (22.0)	58 (68.2) (41.7)	85 (100)
2.	13 (12.7) (25.5)	8 (7.8) (11.6)	17 (16.7) (41.5)	64 (62.7) (46.0)	102 (100)
3.	23 (35.4) (45.1)	23 (33.8) (31.9)	8 (12.3) (19.6)	12 (18.5) (8.6)	65 (100)
4.	14 (29.2) (27.5)	22 (45.8) (31.9)	7 (14.6) (17.1)	5 (10.4) (3.6)	48 (100)
Total:	51 (17.0) (100)	69 (23.0) (100)	41 (13.7) (100)	139 (46.3) (100)	300 (100)

Cluster 1= Bahun, Chhetri 2= Newar 3= Tamang, Gurung, Magar
4= Bhujel Majhi and Untouchable Caste (Kami Damai & Sarki)

Table 6

Main Occupation of Population aged 10 years & above

VDCs	Jalkanya (n=220)	Sitalpati (n=241)	Rakathum (n=248)	Mangaltar (n=306)	Katunjebesi (n=266)	Khanalthok (n=268)	Total (n=1549)
Agriculture	70.9	67.2	67.3	42.2	57.9	57.1	59.1
Industry	-	0.4	2.0	-	0.4	1.9	0.8
Service	8.6	9.5	4.8	9.2	8.3	7.8	8.1
Trade	-	1.7	0.8	11.4	0.8	3.4	3.4
Wages	1.8	6.2	7.3	3.3	1.5	2.6	3.7
Contract	-	-	-	-	-	0.4	0.1
Student	16.8	12.4	14.9	27.5	26.7	26.1	21.1
Household work	1.8	2.5	2.8	6.5	4.5	0.7	3.8
All	14.2	15.6	16.0	19.8	17.2	17.3	100.0

Table 7

Secondary Occupation of Population aged 10 years & above

VDCs	Jalkanya (n=220)	Sitalpati (n=241)	Rakathum (n=248)	Mangaltar (n=306)	Katunjebesi (n=266)	Khanalthok (n=268)	Total (1549)
Agriculture	12.7	19.1	18.1	21.2	1.9	7.1	13.6
Industry	0.5	-	1.2	-	1.5	4.5	1.3
Service	1.4	0.4	0.4	1.0	-	0.4	0.6
Trade	1.4	-	2.4	7.8	0.4	2.2	2.6
Wages	25.5	10.8	18.5	5.6	7.1	2.2	11.0
Contract	0.5	-	-	0.3	0.4	-	0.2
Student	0.9	0.4	1.2	-	-	0.4	0.5
Household work	-	-	3.6	6.9	-	-	1.8

Table 8

Average Size of Cultivated Land Owned, Rented in and Rented Out in Sample Households

(In Ropani)				
VDCs	Own Land Self Cul.	Rented in	Rented out	Total Land culti.
Jalkanya (n=50)	10.44	0.62	0.17	11.06
Sitalpati (n=50)	15.45	-	-	15.45
Rakathum (n=50)	22.27	0.10	-	22.37
Mangaltar (n=50)	12.52	0.42	0.26	12.94
Katunjebesi (n=50)	17.21	0.28	0.16	17.49
Khanalthok (n=50)	17.24	0.53	0.13	17.77
All (n=300)	15.85	0.33	0.12	16.18

Table 9

Average Size of Khet and Bari Land Owned

(in Ropani)							
VDCs	Jalkanya (n=50)	Sitalpati (n=50)	Rakathum (n=50)	Mangaltar (n=50)	Katunjebesi (n=50)	Khanalthok (n=50)	Total (n=300)
Irrigated Khet	2.06	2.83	1.24	1.99	5.40	3.53	2.84
Non-Irrig. Khet	2.53	0.66	2.24	0.23	1.07	0.46	1.20
Pakho (bari)	5.85	11.96	18.79	10.30	10.73	13.25	11.81

Table 10

Average Land ownership by Economic Groups

(in Ropani)					
VDCs	Groups				
	Marginal (n=51)	Small (n=69)	Medium (n=41)	Large (n=139)	Total (n=300)
Jalkanya	4.81	7.63	14.98	20.19	11.06
Sitalpati	10.58	14.00	26.00	23.54	15.45
Rakathum	21.49	10.08	20.36	23.81	22.37
Mangaltar	2.52	-	9.05	18.67	12.94
Katunjebesi	9.08	6.06	14.01	23.71	17.49
Khanalthok	2.00	7.05	20.79	21.75	17.77
all	9.10	10.34	15.40	21.90	16.18

Table 11

Average Area Under different Crops under Local and Improved Seeds

(Ropani)

VDCs	Paddy		Wheat		Maize		Millet		Potato	
	L	I	L	I	L	I	L	I	L	I
Jalkanya	4.75	0.16	1.71	-	9.49	-	4.40	-	0.59	-
Sitalpati	2.14	0.73	2.50	0.89	8.80	1.49	-	-	0.02	0.02
Rakatham	2.22	-	2.00	-	16.78	-	1.34	-	0.18	-
Mangaltar	2.90	-	2.16	-	8.94	-	0.60	-	0.43	-
Katunjebesi	7.41	-	4.55	-	11.28	-	-	-	0.05	-
Khanalthok	5.63	-	3.57	-	12.74	-	0.11	-	0.44	-

L= Local; I=Improved

Table 12

Percentage Distribution of Hoeseholds Using Modern Inputs in Paddy Crop in Sample Villages

VDCs	Jalkanya	Sitalpati	Rakatham	Mangaltar	Katunjebesi	Khanalthok	Total
Seed	(n=39)	(n=38)	(n=32)	(n=35)	(n=44)	(n=36)	(n=224)
Local	97.4	71.1	100.0	88.6	90.9	91.4	89.7
Improved	2.6	28.9	-	8.6	2.3	-	7.2
Both	-	-	-	2.9	6.8	8.6	3.1
Fertilizer	(n=38)	(n=35)	(n=32)	(n=35)	(n=44)	(n=35)	(n=219)
Compost	21.1	17.1	50.0	5.7	-	-	14.6
Chemical	10.5	2.9	-	17.1	9.1	-	6.8
Both	68.4	80.0	50.0	77.1	90.9	100.0	78.5
Treatment	(n=2)	(n=2)		(n=7)	(n=19)	(n=32)	(n=224)
Traditional	-	-	-	-	-	-	-
Pesticides	100.0	100.0	-	71.4	94.7	96.9	93.5
Both	-	-	-	28.6	5.3	3.1	6.5
Tools			(n=1)	(n=1)	(n=4)	(n=7)	
Sprayer	-	-	-	100.0	25.0	71.4	
Pumping Set	-	-	-	-	75.0	28.6	
Thresher	-	-	-	-	-	-	
Plough	-	-	100.0	-	-	-	

Table 13

Average Yield in Kg Under different Crops

(per KG)

VDCs	Paddy	Wheat	Maize	Millet	Potato
Jalkanya	110.5	42.0	64.2	62.7	210.0
Sitalpati	195.2	56.1	54.6	-	136.0
Rakatham	134.3	87.5	117.3	65.0	64.7
Mangaltar	189.3	95.1	134.5	22.1	61.5
Katunjebesi	196.0	47.0	106.2	-	226.8
Khanalthok	340.4	114.8	207.3	87.7	311.2
Note: Rate Kilo/Pathi	2.44	3.16	3.16	3.63	3.4

Table 14

Average Number of Livestock and Poultry birds in Sample Households

	Jalkanya (n=50)	Sitalpati (n=50)	Rakatham (n=50)	Mangaltar (n=50)	Katunjebesi (n=50)	Khanalthok (n=50)	(n=300)
Cow	0.78	2.02	0.38	0.98	0.96	1.38	1.08
Bullock	0.92	1.58	1.56	0.96	0.98	1.16	1.19
He Buffaloes	0.32	0.16	0.10	0.20	0.24	0.32	0.22
She Buffaloes	1.46	0.98	1.36	1.22	1.48	1.20	1.28
Sheep	0.04	0.26	0.02	-	0.02	-	0.06
Goat	2.42	4.50	2.92	4.54	2.34	5.96	3.78
Pig	0.10	0.20	0.48	-	-	0.16	0.16
Chicken	4.24	4.00	7.72	9.14	3.70	19.16	7.99
Rabbit	0.22	-	0.44	-	-	0.16	0.14

Table 15

Average No. of Livestock Owned by Households by Economic Status

V D	Marginal					Small					Medium					Large				
	Cs	C	B	G	CH	O	C	B	G	CH	O	C	B	G	CH	O	C	B	G	CH
1	0.44	1.44	1.56	1.67	-	1.59	1.45	2.59	3.27	0.32	1.75	1.38	2.38	7.13	0.50	2.91	3.00	3.45	6.18	-
2	1.82	0.64	3.82	1.45	-	3.64	0.96	4.18	4.25	-	6.00	2.50	18.50	11.00	-	5.11	2.00	5.78	4.78	-
3	1.55	1.82	4.64	9.55	-	1.00	1.67	4.00	2.67	-	1.57	1.43	2.43	5.14	-	2.28	1.31	3.14	8.17	0.76
4	0.31	0.23	1.54	3.62	-	-	-	-	-	-	2.38	1.25	4.88	6.00	-	2.55	2.00	5.79	12.48	-
5	1.00	1.00	1.33	1.33	-	1.25	0.88	1.63	4.00	-	1.15	1.15	2.15	6.00	-	2.65	2.35	2.81	2.73	-
6	1.00	0.25	2.75	4.75	-	2.00	1.25	6.75	8.63	-	0.67	1.67	5.67	12.33	-	3.00	1.71	6.40	23.40	0.23
All	1.02	0.92	2.78	4.04	-	2.41	1.17	3.67	4.35	0.10	1.78	1.37	3.83	6.78	0.10	2.82	1.93	4.65	11.61	0.22

Table 15 (Contd...)

VDCs	Total				
	C	B	G	CH	O
1	1.70	1.78	2.56	4.24	0.22
2	3.60	1.14	4.96	4.05	-
3	1.94	1.46	3.42	7.72	0.44
4	1.94	1.42	4.54	9.14	-
5	1.94	1.72	2.36	3.70	-
6	2.54	1.52	6.12	19.16	0.16
All	2.28	1.51	3.99	7.99	0.14

Note C=Cow/Bullock G= Sheep/Goat/Pig O= Other
 B=He/She Buffaloes CH= Chicken

VDC 1=Jalkanya 2=Sitalpati 3=Rakathum
 4=Mangaltar 5=Katunjebesi 6=Khanalthok

Table 16

Average Number of Fruit Trees in Sample Households

VDCs	Jalkanya (n=50)	Sitalpati (n=50)	Rakathum (n=50)	Mangaltar (n=50)	Katunjebesi (n=50)	Khanalthok (n=50)	Total (n=300)
Orange	4.44	0.02	0.30	0.06	1.12	0.42	1.06
Lemon	0.16	0.94	0.46	0.40	0.64	13.80	2.73
Junar	5.00	0.04	15.54	0.06	0.02	0.14	3.47
Guava	0.98	1.42	0.36	1.74	0.88	15.08	3.41
Mango	0.26	1.46	0.14	2.44	0.92	12.64	2.98
Lichi	-	-	-	0.10	-	0.02	0.02
Pear	0.06	0.02	-	8.50	0.10	0.62	1.55
Banana	17.40	11.72	1.88	18.58	7.04	29.30	14.32
Jack-fruit	-	0.50	0.04	0.76	0.10	1.88	0.55
Pine-apple	0.30	11.46	-	3.86	-	1.82	2.91

Table 17

Average Number of Fruit Trees by Economic Status

VDCs	Marginal	Small	Medium	Large
Jalkanya	5.00	25.13	38.50	47.64
Sitalpati	51.64	63.18	60.50	103.00
Rakatham	49.64	7.67	2.00	12.41
Mangaltar	12.00	-	12.25	54.86
Katunjebesi	0.33	7.63	8.15	14.73
Khanalthok	13.75	11.38	27.67	104.29
Total	26.88	36.19	17.80	53.49

Table 18

Number and Percentage Distribution of Sample Households Engaged in Non-Farm Production by Products

VDCs	Jalkanya	Sitalpati	Rakathum	Mangaltar	Katunjebesi	Khanalthok	Total
	(n=4)	(n=8)	(n=3)	(n=3)	(n=3)	(n=3)	(n=18)
Honey Making	-	25.0	-	-	-	-	16.7
Bamboo Product	-	-	-	33.3	-	-	5.6
Iron Products	-	-	-	-	33.3	-	5.6
Brewing	-	-	12.5	-	-	-	5.6
Other	-	75.0	62.5	66.7	66.7	66.7	66.7

Table 19

Percentage Distribution of Seasonally Migrating Population by Purpose and Destination

Purpose	Outside district but within the country from VDCs						India from VDCs						Abroad from VDCs						Total						
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6							
Seeking/ in Service	81.0	29.7	22.2	38.7	63.0	32.0	100.0	100.0	50.0	50.0	66.7	100.0	83.3	50.0	40.0	-	-	-	75.9	34.1	25.0	39.4	63.3	39.3	
Agriculture Tenant	5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.9	-	-	-	-	-	
Wage Labour	14.3	59.5	57.8	41.9	29.6	40.0	-	50.0	-	33.3	-	33.3	-	50.0	40.0	-	-	-	10.3	56.1	55.8	39.4	30.0	35.7	
Trade/ Commerce	-	-	8.9	6.5	7.4	20.0	50.0	-	50.0	-	-	-	-	-	20.0	-	-	-	3.4	-	9.6	9.1	6.7	17.9	
Contract	-	-	-	3.2	-	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0	-	7.1
Education	-	5.4	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.9	3.8	-
Unknow Job	4.8	-	6.7	9.7	-	50.0	-	-	-	-	-	-	-	-	-	-	-	-	16.7	-	-	-	10.3	-	-

1=Jalkanya 2=Sitalpati 3=Rakathum 4=Mangaltar 5=Katunjebesi 6=Khanalthok

Table 20

Average Cash Income of Households by Source in sample Villages

VDCs	Jalkanya (n=50)	Sitalpati (n=50)	Rakathum (n=50)	Mangaltar (n=50)	Katunjabesi (n=50)	Khanalthok (n=50)	Total (n=300)
Cereals	455	377	711	2274	5235	7706	2794
Vegitables	24	12	-	-	-	3610	608
Horticulture	1046	298	-	1077	100	918	573
Livestock	299	572	1054	2766	1241	3067	1500
Trade/Commerce	174	572	1060	10652	560	1844	2477
Wages	2647	1732	5340	3366	1618	488	2531
Salaries	2265	1120	1660	4796	4392	1974	2701
Interest/Rent	-	262	200	2116	840	-	570
Trans. Payment	-	582	674	992	1600	344	699
Livestock Prod.	38	149	200	2088	1628	1730	972
Other	-	-	1040	3904	284	624	975
Total	6948	5677	11939	34032	17502	22307	16400

Table 21

Average Cash Income of Households by Source in sample Villages

VDCs	Marginal (n=51)	Small (n=69)	Medium (n=41)	Large (n=139)	Total (n=300)
Cereals	182	112	337	5808	2794
Vegitables	-	203	85	1186	608
Horticulture	132	132	278	1041	573
Livestock	849	519	832	2423	1500
Trade/Commerce	9424	657	1110	1235	2477
Wages	3549	2461	2862	2096	2532
Salaries	2610	810	1323	4080	2701
Interest/Rent	1510	190	439	452	570
Trans. Payment	490	451	268	1025	699
Livestock Prod.	50	454	638	1666	972
Other	2039	75	293	1233	975
Total	20836	6064	8464	22246	16401

Table 22

Average Amount of Borrowing form Institutional Source and Money Lenders by No. of Borrowers within Parenthesis for each Villages Separately.

Jalkanya		(In Rupees)				
Source	Agriculture	Livestock	House and Land Purchase	Marriage	Social Purpose	Other
ADB	3330 (9)	-	9375 (4)	-	-	4575 (4)
Commercial Bank	2200 (1)	-	5000 (1)	-	-	2500 (1)
Money Lender	31000 (2)	7333 (3)	17000 (4)	7000 (3)	2500 (2)	5867 (21)
Total	8561 (11)	7333 (3)	12278 (9)	7000 (3)	2500 (2)	6000 (24)

Sitalpati (In Rupees)						
Source	Agriculture	Livestock	House and Land Purchase	Marriage	Social Purpose	Other
ADB	-	6115 (13)	8750 (4)	-	-	5000 (2)
SFDP	5000 (1)	9167 (12)	15000 (1)	-	-	8000 (1)
Commercial Bank	-	10000 (1)	10000 (1)	-	-	-
Money Lender	2600 (1)	-	16000 (4)	8000 (1)	5000 (2)	7212 (25)
Total	3800 (2)	7980 (25)	15500 (8)	8000 (1)	5000 (2)	7082 (28)
Rakatham (In Rupees)						
Source	Agriculture	Livestock	House and Land Purchase	Marriage	Social Purpose	Other
ADB	7014 (7)	-	-	-	-	4450 (2)
Commercial Bank	-	-	-	-	-	10000 (1)
Money Lender	-	6000 (1)	-	5000 (1)	9250 (4)	25000 (1)
Total	7014 (7)	6000 (1)	-	5000 (1)	9250 (4)	10975 (4)
Mangaltar (In Rupees)						
Source	Agriculture	Livestock	House and Land Purchase	Marriage	Social Purpose	Other
ADB	7000 (2)	9500 (4)	-	-	-	9000 (2)
Money Lender	7000 (1)	5000 (1)	-	-	-	16333 (3)
Total	7000 (3)	8600 (5)	-	-	-	13400 (5)
Katunjebesi (In Rupees)						
Source	Agriculture	Livestock	House and Land Purchase	Marriage	Social Purpose	Other
ADB	14830 (9)	10944 (9)	-	-	-	-
SFDP	1500 (1)	13000 (2)	-	-	-	-
Money Lender	-	-	20000 (2)	10000 (1)	25000 (1)	9000 (4)
Total	13497 (10)	11318 (11)	20000 (2)	10000 (1)	25000 (1)	8000 (5)
Khanalthok (In Rupees)						
Source	Agriculture	Livestock	House and Land Purchase	Marriage	Social Purpose	Other
ADB	13875 (16)	8125 (8)	-	-	-	74000 (3)
Commercial Bank	-	10000 (1)	-	-	-	10000 (3)
Money Lender	6000 (5)	-	12500 (2)	-	-	2500 (2)
Total	12000 (21)	8333 (9)	12500 (2)	-	-	36714 (7)

Table 23

Average Amount of Borrowing from Institutional Source and Money Lenders by No. of Borrowers within Parenthesis for all VDCs together

Source	Agriculture	Livestock	House and Land Purchase	Marriage	Social Purpose	Other
ADB	10431 (43)	8265 (34)	9363 (8)	-	-	21323 (13)
SFDP	3250 (2)	9714 (14)	15000 (1)	-	-	8000 (1)
Commercial Bank	2200 (1)	10000 (2)	7500 (2)	-	-	8500 (5)
Money Lender	11289 (9)	6600 (5)	36308 (13)	7333 (6)	8556 (9)	7412 (57)
Total	10349 (54)	8704 (54)	26114 (22)	7333 (6)	8556 (2)	10277 (73)

Table 24

Average Amount per Borrower by Sources of Borrowing in Sample Villages

Source	Jalkanya	Sitalpati	Rakathum	Mangaltar	Katunjabesi	Khanalthok	Total
ADB	5361 (16)	6553 (19)	6444 (9)	8750 (8)	14498 (16)	23136 (22)	11991 (90)
SFDP	-	9857 (14)	-	-	13750 (2)	-	10344 (16)
Commercial Bank	3233 (3)	10000 (2)	10000 (1)	-	-	10000 (4)	7970 (10)
Money Lender	9413 (32)	8545 (31)	10429 (7)	12200 (5)	15857 (7)	6667 (9)	9573 (91)

Table 25

Average Amount per Borrower by Sources of Borrowing by Economic Status

Source	Marginal	Small	Medium	Large	Total
ADB	7364 (11)	5880 (21)	9482 (11)	16393 (47)	11992 (90)
SFDP	5000 (3)	10857 (7)	12500 (2)	12375 (4)	10344 (16)
Commercial Bank	10000 (2)	6250 (2)	7500 (2)	8050 (4)	7970 (10)
Money Lender	5041 (17)	9437 (38)	9100 (10)	12915 (26)	9573 (91)

Table 26

Literacy Status of the Sample Population (6 year and above)
by Gender

VDCs	Sex	Total Population	Literate	Percent
Jalkanya	Male	126	99	61
	Female	137	64	39
	Total	263	163	62
Sitalpati	Male	143	94	73
	Female	142	34	27
	Total	285	128	45
Rakathum	Male	138	99	81
	Female	151	23	19
	Total	289	122	42
Mangaltar	Male	180	151	60
	Female	176	99	40
	Total	356	250	70
Katunjabesi	Male	154	115	62
	Female	160	70	37
	Total	314	185	59
Khanalthok	Male	163	135	67
	Female	159	68	34
	Total	322	203	63
All	Male	904	693	77
	Female	925	358	39
	Total	1829	1051	57

Table 27

Literacy Status of the Sample Population (6 year and above)
by Caste/Ethnic Status

Caste/ Ethnic	Sex	Total Population	Literate	Percent
1	Male	258	226	77
	Female	282	169	39
	Total	540	395	73
2	Male	314	230	73
	Female	315	83	26
	Total	629	313	50
3	Male	203	155	76
	Female	184	80	43
	Total	387	235	61
4	Male	129	82	64
	Female	144	26	18
	Total	273	108	40
All	Male	904	693	77
	Female	925	358	39
	Total	1829	1051	57

Note 1 = Bhraman, Chhetri 2 = Newar 3 = Tamang, Gurung, Magar
4 = Bhujel, Majhi, Untouchable

Table 28
Literacy Status of the Sample Population (6 year and above)
by Economic Status

Economic Status	Sex	Total Population	Literate	Percent
Marginal	Male	140	99	71
	Female	151	53	35
	Total	291	152	52
Small	Male	184	125	68
	Female	177	52	29
	Total	361	177	49
Medium	Male	113	75	66
	Female	119	38	32
	Total	232	113	49
Large	Male	467	394	84
	Female	478	215	45
	Total	945	609	64
All	Male	904	693	77
	Female	925	358	39
	Total	1829	1051	57

Table 29

Education Attainment by percentage of the Sample Population
(11 year and above)

VDCs ---->	Jalkanya (n=209)	Sitalpati (n=235)	Rakathum (n=237)	Mangaltar (n=289)	Katunjebesi (n=251)	Khanalthok (n=259)	Total (n=1480)
Primary	19.1	10.2	17.7	22.5	17.9	19.3	18.0
Secondary	12.9	13.6	2.5	7.6	13.1	9.3	9.7
SLC	6.7	3.4	3.0	10.0	2.0	2.7	4.7
Intermediate	1.0	0.9	1.3	2.8	3.2	1.5	1.8
Graduate +	1.9	0.9	-	0.7	4.8	-	1.4

Table 30

Education Attainment by Caste/Ethnic Status
(11 year and above)

Caste/* Ethnic	1 (n=411)	2 (n=512)	3 (n=342)	4 (n=215)	Total (n=1480)
Primary	18.7	17.6	20.2	14.0	18.0
Secondary	13.1	4.1	13.5	10.7	9.7
SLC	7.5	2.3	7.3	0.9	4.7
Intermediate	3.4	0.8	2.3	0.5	1.8
Graduate +	4.1	0.2	0.2	-	1.4

Note * 1 = Bhraman, Chhetri 2 = Newar 3 = Tamang, Gurung, Magar
4 = Bhujel, Majhi, Untouchable

Table 31

Education Attainment by Economic Status (11 year and above)

VDCs	Marginal (n=241)	Small (n=281)	Medium (n=182)	Large (n=776)	Total (n=1480)
Primary	19.5	16.7	14.8	18.7	18.0
Secondary	9.5	8.9	6.6	10.8	9.7
SLC	6.6	2.1	6.0	4.8	4.7
Intermediate	3.7	0.4	1.6	1.8	1.8
Graduate +	0.4	-	-	2.4	1.4

Table 32

Percentage Distribution of School Enrollment by School-going Age, Gender and Economic Status

VDCs	Age Level	Sex	Marginal			Small			Medium			Large		
			T	E	%	T	E	%	T	E	%	T	E	%
Jalkanya	6-10	M	4	3	75	10	9	90	2	1	50	4	2	50
		F	5	1	20	16	16	100	3	1	33	10	9	90
		T	9	4	44	26	25	96	5	2	40	14	11	78
	11-15	M	2	-	-	7	1	14	2	1	50	2	1	50
		F	4	-	-	6	1	17	-	-	-	7	4	57
		T	6	-	-	13	2	15	2	1	50	9	5	56
Sitalpati	6-10	M	2	-	-	25	16	64	1	1	100	5	3	60
		F	3	-	-	9	3	33	1	1	100	4	4	100
		T	5	-	-	34	19	56	2	2	100	9	7	78
	11-15	M	1	-	-	5	3	60	1	1	100	3	1	33
		F	3	1	33	13	1	8	1	-	-	4	2	50
		T	4	1	25	18	4	22	2	1	50	7	3	43
Rakatham	6-10	M	7	1	14	3	1	33	6	-	-	7	1	14
		F	7	2	29	2	1	50	8	-	-	12	1	9
		T	14	3	68	5	2	40	14	-	-	19	2	22
	11-15	M	3	-	-	-	-	-	2	-	-	12	-	-
		F	5	-	-	2	-	-	4	-	-	9	-	-
		T	8	-	-	2	-	-	6	-	-	21	-	-
Mangaltar	6-10	M	5	1	20				5	-	-	20	8	40
		F	9	3	33				5	1	20	23	12	52
		T	14	4	29				10	1	10	43	20	47
	11-15	M	8	1	13				5	-	-	19	-	-
		F	6	1	17				3	-	-	17	-	-
		T	14	2	14				8	-	-	36	-	-
Katunjebesi	6-10	M	2	-	-	4	-	-	6	2	33	23	14	61
		F	1	-	-	3	-	-	9	3	33	15	6	40
		T	3	-	-	7	-	-	15	5	33	38	20	53
	11-15	M	2	-	-	5	1	20	3	-	-	12	8	67
		F	2	-	-	1	-	-	7	-	-	24	7	29
		T	4	-	-	6	1	17	10	-	-	36	15	42
Khanlthok	6-10	M	-	-	-	6	3	50	1	-	-	21	8	38
		F	5	-	-	2	1	50	3	-	-	25	7	28
		T	5	-	-	8	4	50	4	-	-	46	15	33
	11-15	M	4	-	-	4	-	-	1	-	-	21	4	19
		F	1	-	-	1	1	100	5	-	-	15	2	13
		T	5	-	-	5	1	20	6	-	-	36	6	17
All	6-10	M	20	5	25	48	29	60	21	4	19	80	36	45
		F	30	6	20	32	21	66	29	6	21	89	39	44
		T	50	11	22	80	50	63	50	10	20	169	75	44
	11-15	M	20	1	5	21	5	24	14	2	14	69	14	20
		F	21	2	10	23	3	13	20	-	-	15	15	20
		T	41	3	7	44	8	18	34	2	6	145	29	20

Note T= Total E= Enrollment

Table 33
Percentage Distribution of School Enrollment by School-going Age, Gender and Economic Status by Caste/Ethnic

CAST	Age Level	Sex	Marginal			Small			Medium			Large			Total		
			T	E	%	T	E	%	T	E	%	T	E	%	T	E	%
1	6-10	M	1	-	-	16	12	75	7	2	29	39	23	59	63	37	59
		F	-	-	-	13	12	92	8	2	25	45	25	56	66	39	59
		T	1	-	-	29	24	83	15	4	27	84	48	57	129	76	59
	11-15	M	-	-	-	5	1	20	1	-	-	19	7	37	25	8	32
		F	-	-	-	5	2	40	9	-	-	35	11	31	49	13	27
		T	-	-	-	10	3	30	10	-	-	54	18	33	74	21	28
2	6-10	M	8	1	13	6	1	17	9	1	11	30	9	30	53	12	23
		F	8	3	38	4	1	25	15	3	20	37	11	30	64	18	28
		T	16	4	25	10	2	20	24	4	17	67	20	30	117	30	26
	11-15	M	4	-	-	5	1	20	7	-	-	36	2	6	52	3	6
		F	6	-	-	2	-	-	9	-	-	28	1	4	45	1	2
		T	10	-	-	7	1	14	16	-	-	64	3	5	97	4	4
3	6-10	M	9	4	44	10	8	80	5	1	20	7	2	29	33	15	45
		F	16	3	19	4	4	100	4	-	-	6	2	33	30	9	30
		T	25	7	28	14	12	86	9	1	11	13	4	31	63	24	38
	11-15	M	15	1	6	3	1	33	4	1	25	10	4	40	32	6	19
		F	9	1	11	7	1	14	1	-	-	10	3	30	27	4	15
		T	24	2	8	10	2	20	5	1	20	20	7	35	59	10	17
4	6-10	M	2	-	-	14	8	57	-	-	-	4	2	50	20	10	50
		F	6	-	-	11	4	36	2	1	50	1	1	100	20	6	30
		T	8	-	-	25	12	48	2	1	50	5	3	60	40	16	40
	11-15	M	1	-	-	8	2	25	2	1	50	4	1	25	15	4	27
		F	6	1	17	9	-	-	1	-	-	3	-	-	19	1	5
		T	7	1	14	17	2	12	3	1	33	7	1	14	34	5	15

Note 1 = Bhraman, Chhetri 2 = Newar 3 = Tamang, Gurung, Magar
4 = Bhujel, Majhi, Untouchable

Table 34

Percentage distribution of Households by Source of Drinking Water

VDCs	Jalkanya (n=50)	Sitalpati (n=50)	Rakathum (n=50)	Mangaltar (n=50)	Katunjabesi (n=50)	Khanalthok (n=50)	Total (n=300)
Private Pipe	-	-	-	2.0	-	-	0.3
Public Pipe	18.0	-	94.0	56.0	40.0	66.0	45.7
Public Well	2.0	8.0	6.0	36.0	54.0	10.0	19.3
Natural Tap	4.0	8.0	-	-	2.0	-	2.3
River	76.0	84.0	-	6.0	4.0	24.0	32.3

Table 35

Percentage of Households Reporting access to different source of treatment in the Last Twelve Months

VDCs	Jalkanya (n=37)	Sitalpati (n=38)	Rakathum (n=38)	Mangaltar (n=37)	Katunjabesi (n=28)	Khanalthok (n=30)	Total (n=208)
Hospital	51.4	28.9	18.4	8.1	28.6	23.3	26.4
Health Center	2.7	2.6	5.3	-	7.1	3.3	3.4
Health Post	27.0	44.7	31.6	83.8	10.7	13.3	37.0
Sub Health Post	-	-	10.5	-	-	-	1.9
Private	2.7	-	-	-	32.1	36.7	10.1
Dhami/Jhakri	13.5	15.8	7.9	-	14.3	16.7	14.4
Home	2.7	2.6	-	8.1	7.1	6.7	5.8
Other	-	5.3	31.6	-	-	-	1.0

Table 36

Percentage of Households with/without Latrines in Sample Villages

VDCs	Jalkanya (n=50)	Sitalpati (n=50)	Rakathum (n=50)	Mangaltar (n=50)	Katunjabesi (n=50)	Khanalthok (n=50)	Total (n=300)
Safe Latrine	-	-	-	4.0	-	2.0	1.0
Pit Latrine	4.0	4.0	4.0	14.0	8.0	42.0	12.7
Open Field	96.0	96.0	96.0	82.0	92.0	56.0	86.3

A Write-Up
On
Poverty Alleviation Efforts in Nepal
Prepared for the Japan International
Development Agency (JICA)

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Kathmandu

Table of contents

	<u>Page No.</u>
1. A General Poverty Profile of Nepal	1
2. An Overview of the Dynamics of Poverty in Nepal	3
3. A Historical Perspective of Different Poverty Alleviation Interventions in Nepal and a Brief Assessment of Their Performance	7
4. An Assessment of Critical Factors for Poverty Alleviation and Possible Strategie and Programmes for Its Effective Implementation in Nepal	19
5. References	29

A Study on Poverty Alleviation Efforts in Nepal

1. A General Poverty Profile of Nepal

1.1 The General Scenario:

The latest estimate of a GNP per capita of US\$ 199 (MOF, 1994) does not pick Nepal up from among the group of the world's least developed countries. This together with other relevant statistics on social dimensions such as life expectancy at birth (55.9 years), infant mortality rates (102 per 1000), maternal mortality rates (850 per 100,000), access to water supply to only 39 per cent of the rural population and the literacy rates of 40 per cent at national level confirm the degree of poverty and deprivation in Nepal in general.

Since the beginning of planned development efforts in 1956 till to-date, Nepal has so far completed seven development plans with a heavy focus on overall economic growth. Yet the country still remains one of the least developed among the developing ones.

The growth in national income during most of the development plan periods could not keep pace with population growth resulting in a decline in real per capita income and thereby exacerbating widespread poverty in the country. The population living below the poverty floor is increasingly growing. Until recently, it was estimated that 42.5 per cent of the total population falls below the floor. A recent World Bank Report (1990) however, indicates that as much as 71 per cent of the population falls below this stringent floor.

Agriculture is the mainstay of Nepalese economy and therefore contributes nearly 42 per cent of GDP and employs about 82 per cent of the total work force. Land is the main income producing asset and access to it largely determines income levels. But it is so skewedly distributed that the top 5 per cent of owners control about 40 per cent of the cultivated land while the bottom 60 per cent control about 20 per cent (World Bank/UNDP, 1990:p. 33). As a result, majority of farmers at lower level of the farming community hold such farm sizes which can hardly be operated as independent business units. Poverty in Nepal is therefore, chronic due basically to the insufficiency of the land base vis-a-vis the population depending upon agriculture for its livelihood.

1.2 The Physical Setting of the Country

Sandwiched between the two Asian giants, China on the north and India on south, Nepal is basically a country of poor people who constitute a strong numerical base but control very little of the resource base specially the land. Since poverty in Nepal is predominantly a rural phenomenon, most of the poor people belong to the country side and are scattered all over the 3,995 Village Development Committees (VDCs) of the kingdom. These VDCs begin from the very top of the Himalayas and extend to the inner Himalayas, the Siwalik hills and the terai which forms a part of the Great Gangetic Plain. The landscape of the kingdom therefore, represents diverse topographic and climatic conditions which include towering snow peaks, bleak alpine high lands, swampy forests, and rich rice-clad valleys within a comparatively few kilometres of each other.

With such varying degrees of topographic and climatic conditions, Nepal displays a wide range of inter-regional diversity in agricultural practices and changes which have occurred therein. The situation on the farms on mountain slopes differs substantially from that of the terai plain region. The use of chemical fertilizers in food grain production has remained critically low in the mountainous tracts whereas the application of the same in the terai has been more than double as that of the mountainous regions. The average farm size in the hills and mountains is 0.86 ha. which is too small to generate any marketable surplus pointing to the existence of subsistence farming, by and large. Commensurately, majority of the hill and mountain population falls below the poverty threshold.

1.3 The Resource Distribution Pattern

Since more than 80 per cent of the population is still engaged in agriculture sector for its livelihood, agricultural land constitutes the first and foremost productive resource. But the system by which agricultural land is owned, controlled and operated remains one of the critical economic problems in Nepal. What is more problematic is that every holding becomes subdivided and fragmented when the cultivating proprietor dies, for the local system favours the gavel-kind inheritance (a tenure by which lands are inherited from the father by all sons in equal proportions) under which an average size of farm declines more rapidly.

The area of land operated by a poor household and a non-poor one in the terai remains 1.13 ha. and 2.78 ha. respectively. The same in the hills is 0.75 ha. for a poor household and 1.70 ha. for a non-poor one (Ibid p. 54-59). Equally critical is the fact that there exists growing regional income disparities between the farmers in the hills and the terai resulting from the variations in the use of inputs. While chemical, biological, mechanical and managerial technologies are available in the form of fertilizers, seeds, improved tools and extension services, they are being used only by a limited number of farmers near larger population centres in the terai area of Nepal. Virtually all the hill farmers live in remote and roadless areas without access to these technologies and practise subsistence agriculture. This again results in a low level of production ruling out any chance of financing the productivity-enhancing technologies on their own. Access to institutional credit services in many parts of the country remains still a far cry.

1.4 Women and Poverty

Of the total contribution of the agricultural sector to GDP, the contribution of women is found to be quite significant. Women in Nepal involve themselves heavily on both farm and domestic activities. As much as 86 per cent of all domestic work and 57 per cent of agricultural activities are performed by them (Bennett and Acharya, 1979). As a result, their total contribution to the household income remains at 50 per cent as opposed to only 44 per cent for males and 6 per cent for children between the ages of 10 to 14. Nevertheless, these women are recognised only as *farmer's wives* which, by and large, ignores their own productive existence.

Documenting women's actual economic activities only began during the early-seventies. The UN Decade for women gave an impetus to women's studies resulting in varieties of literature and documents which recognise duly the women's productive roles in the national economy.

Women constitute nearly 51 per cent in the total population structure of Nepal. But they represent one of such communities in the country which has yet to obtain its fair share. Despite the general improvement in overall life expectancy of 55.90 years for both sexes, life expectancy of women is 52.60 years, a case not usually found in the world except in Bangladesh and Bhutan. This discrepancy is related to high female mortality risks during the childbearing years. It also reflects the continuing adverse health and nutrition situation determined by the socio-cultural practices and beliefs that limit women's access to nutrition and health both within the household and also the institutionalized health system that has been put into practice in Nepal since time immemorial.

General disparities in education between male and female is a common phenomenon. Despite the average of 40 per cent of literacy rates at national level, the literacy rates among women is limited to 26 per cent only.

Stated above are some of such facts which make an attempt to present a symbolic scenario of Nepalese women who occupy more than *one-half of the sky* of the kingdom but have less access to income, wealth, modern avenues of employment, education and health facilities than men, suffer from higher rates of malnutrition and mortality than men, and have fewer legal rights than men, especially in property and family matters.

2. An Overview of the Dynamics of Poverty in Nepal

A set of forces belonging to both economic and non-economic areas have often been constellating together to further aggravate the poverty situation in Nepal. Policy measures aiming no less than at the eradication of poverty must accord due priority to social dimensions which include human resources development (including population planning) and enhancing the role of women in development, among others. To go further, programmes aiming at economic development, in general and rural development through poverty alleviation, in particular must view development as a single and unified process interrelating various aspects of rural life such as economic, social, technical and even political into one. This has hardly happened so in Nepal except in selected cases. As a result, poverty situation in Nepal has worsened than before.

Most of the forces creating poverty are essentially social. They reflect systems of resource allocation that are made by societies, and as such they can be reversed. Policies related to income-transfer, credit delivery, and social and productive services which neglect the poor, in general and remain usually gender-based, in particular are not natural. Therefore, the causes of poverty must be sought elsewhere while its effects can be measured on the level of the individual. Though several factors contribute to poverty, yet some of them creating poverty and keeping it up in Nepal follow as under.

2.1 Policy Distortions

One of the serious problems with most of the countries is that while all of them aim at poverty alleviation, the policies they adopt contribute to it. Nepal is not an exception to this. Policies relating to public finance and public expenditure include some of such elements which expose the poor to the costs, and exclude them from the benefits. Some of the examples to this direction include the followings:

- Though the urban population is increasing tremendously - it increased by 130 per cent between 1971-81 (NPC/UNICEF, 1992: p. 15), yet its' share in the total population of the country is a little more than 9 per cent at present. However, the policy of supplying subsidized food which mostly goes to Kathmandu and the urban areas (World Bank/UNDP, 1990: p. 92) has become a rule rather than an exception.
- Available data corroborate the fact that about 90 per cent of the fertilizers and other agro-chemicals are used solely in Kathmandu valley and in the terai (World Bank 1988: p. 24). Yet the fertilizer subsidy policy is being continued with the assumption that food grain production at national level would alarmingly come down if the policy is withdrawn.
- The benefits accruing from the relatively favourable treatment given to industries in the form of tax concessions and other incentives compared to agriculture go in favour of large scale producers, by and large. The small scale producers which include the poor rarely enjoy such benefits. Imposing export taxes on agricultural goods is another example of contributing to rural poverty, for most of such goods are produced by rural poor.
- Development expenditure allocation pattern in Nepal does not seem to have borne the development with a *human face concept* in mind. Social service related programmes such as education, health, drinking water and local development benefiting mainly the rural poor remain inadequately funded. Of the total development expenditure of Rs. 132,386.5 million incurred in Nepal between 1983-94, the amount spent in implementing the social programmes stands at Rs. 39,682.9 million, a little less than 30 per cent of the total (MOF/HMGN, 1994: table-6.1.1).
- The concern for human resource development is increasingly growing with a sharp focus on education with the belief that uneducated (illiterate), unskilled, and non-motivated people cannot contribute to development. But the investment in education, though increasing over the years, has remained only 14 per cent of the development budget between 1983-94 (Ibid). This falls far below given the literacy rates in the country. As a result, children of school age are found to have disproportionately concentrated among the poor families. Educational chances are bare minimum among them, in general and more so for girls, in particular.

Many such policies including others tend to either drain away the benefits from the poor in Nepal which they may get from the implementation of anti-poverty programmes or transfer something for nearly nothing in exchange, or involve both.

2.2 Severe Population Pressure on Limited Land Base

Nepal has been witnessing a sluggish compensatory growth in off-farm activities resulting in a severe population pressure on limited land. The population density in the country increased from 79 to 103 persons per square kilometre between 1971-81, and stands at 123 at present. The annual growth rate of population is now estimated at 2.1 per cent. If this growth rate continues further for a couple of years to come even with a marginal reduction, it will result in a further relentless and growing build up of surplus labour putting pressure again on the limited land in absence of other avenues of employment outside agriculture.

Of the total of 14.5 million hectares of land, with most of all arable land used, the terai has the largest share (58.5 per cent), followed by the hills (23.4 per cent) and the mountains (4.0 per cent) vis-a-vis the population distribution of 46.8 per cent, 46.0 per cent and 7.2 per cent respectively of the total of nearly 19 million (NPC/UNICEF, 1992: p. 12-23). This shows that the terai agriculture has potential for improvement despite a few agronomic constraints, while the hills and mountain agriculture offer limited opportunities for growth due basically to high human pressure on land. The farming population in the hills and mountains is suspected to suffer further, for the major activities in such areas in terms of employment are farm work which has already faced the acute problem of unutilized labour days.

2.3 Inadequate Supply of Agricultural Inputs and Extension Services

Average fertilizer use is estimated at 19 kg. per hectare, which is the lowest in South Asia. The use of fertilizer in terms of contributing to agriculture production depends much upon the seed-fertilizer-water breakthrough process. Fertilizer alone remains of no use to majority of small farmers in Nepal who rely primarily on rain-fed systems, for the holdings they own usually happen to be the upland and terraces.

Agricultural research remains seriously underfunded in Nepal receiving only about 0.25 per cent of agricultural GDP, which again is the lowest among the developing countries (World Bank, 1988: p. 32). Whatever research is done so far with the limited investment has also concentrated more on large scale irrigation schemes benefiting already high potential areas in which the better-off predominate.

Though agriculture extension services have been showing relative increase over the years, yet the supply of trained personnel such as Junior Technicians and Junior Technical Assistants and other trained staff have not kept pace with the volume of work. Moreover, the socio-economic gulf between the poor farmers and extension agents often inhibits contact between them.

Technological interventions in agriculture have increased irrigation as well as the use of fertilizers and insect and pest control measures. However, both the interventions and usage seem to have benefited the big farmers with large holdings.

Viable strategies for small farmers which involve low risk crop rotation techniques together with promoting traditional methods of fertilizer production have been conceptualized. It is however still awaited to be seen what way the strategies work and how can the poor farmers scattered all over the kingdom be educated regarding the modus operandi of the strategies.

2.4 Food Requirements and Their Deficiency

As a result of the skewed distribution of agricultural inputs including land and increasingly deteriorating conditions of the hills and mountain agriculture, the number of food deficit districts has currently gone up to 53 from 32 in 1975. Total production of food grains meets only 90 per cent of the requirements and is further declining. A large chunk of the surplus food produced in the terai does not necessarily go to deficit districts due mainly to high transportation costs and easy access to markets in India across the border.

As a result, a sizeable number of the population in Nepal consumes less than the minimum calorie requirements. By ecological zones, the share of households consuming less than the required calories is 47 per cent in the rural hills, 40 per cent in the urban areas, 31 per cent in the mountains and 23 per cent in the rural terai (NPC/UNICEF, 1992: p. 26). This has caused severe impacts on the nutritional and health status of the people at the bottom rungs of the farming community, in general and children and mothers, in particular.

2.5 Environmental Degradation

Combating poverty implies not only increasing the production of the poor, but also preserving and enhancing the long-term value of the resources they control. However, continued overuse of rapidly depleting forests is taking place in Nepal to meet the energy requirements of the country. Nearly 76 per cent of the country's energy needs depend upon fuel-wood (Ibid p. 29). The traditional equilibrium between man, livestock and forest is broken due basically to high human and animal pressure on natural resources.

What is indisputable, however, is that there is an impending crisis, with extensive deforestation, degradation of the soil and water quality and increasing population pressure. These effects are most seriously felt in rural communities, and most acutely by the rural poor, particularly women and children. It is estimated that the probable costs of resource degradation in Nepal may amount between US\$ 320-556 million per annum by 2010, if strong remedial measures are not taken (world Bank/UNDP, 1990: p. 24).

Mounting erosion and landslides resulting from rapid deforestation and overgrazing in the hills have not only undermined the base of the hill economy but have also created a catastrophic situation in the village settlements in the hills affecting no other than the poor.

It is estimated that 53 per cent of such catastrophic situations result from human activities and the rest occur as a result of natural phenomena.

2.6 Lack of Responsive Institutions

Poverty alleviation should not be seen as a burden on the economy. It rather needs to be viewed as an investment benefiting the national economy, in general and the rural poor, in particular by affecting their entire spectrum of life.

Nobody is initiativeless and therefore does not wish to be a poor. It is the effect of dynamic processes which provides him such a social status.

The poor people lack the means of pursuing their initiatives. Overcoming poverty therefore involves: building upon this initiative and will, helping the poor organize cooperation, and providing them material support. Such support does not have to take the form of handouts or subsidies. It may be in the form of credit along with other necessary support services.

As individuals, many of the poor are virtually unreachable. Credit institutions in general do not remain poor-oriented for one or the other reason. The solution to the problem therefore is to create institutional responsiveness, either through introducing demand-led organization into existing institutions concerned with the poor or through promoting institutions created by the poor themselves.

Nepal has been experimenting the former kind of institutional set-up with the inception of some target group oriented programmes including the Small Farmers Development Programme (SFDP) in 1975. However, time seems to have come to go in for the later option, for the most valid spokesmen of the poor are the poor themselves viewed from any standpoint.

3. A Historical Perspective on Different Poverty Alleviation Interventions in Nepal and a Brief Assessment of Their Performance.

The initiation of planned development effort in the country began in 1956 after a century long self-imposed isolation. The concern for poverty alleviation, however, grew only after the mid-sixties. A large number of measures aiming at developing the rural areas and improving the living conditions of the rural poor were undertaken thereafter. These approaches can be broadly classified into : the institutional reform approach, the area development approach, and the target group approach. A brief discussion on each of the approaches follows:

3.1 The Institutional Reform Approach

The land reform programme initiated in 1964 is the major institutional reform approach with features such as the imposition of the land ceilings, improvement of the land tenure and other agrarian practices, and reorganization and consolidation of the cooperative societies to cater to the production needs of the farmers.

A multiple Sajha Campaign was launched in 1976 which, together with converting the previous cooperatives and other village committees (reorganized under the Land Reform Programme, 1964) into Sajha societies established 487 additional societies adding up to a total number of 1,053. These societies aimed at : providing credit to the small farmers, supplying essential agricultural inputs, selling essential commodities to the villagers at reasonable prices, providing marketing facilities to the farmers, and mobilizing rural savings in order to increase the loanable funds for agricultural credit.

However, the land reform programme could not mean much by way of acquiring a sizeable area of land for redistribution because of the successive evasion of legal provisions regarding land ceilings.

In the same vein, the Sajha wave which once was thought to be an unmixed blessing for increasing agricultural productivity and wellbeing of the farmers, particularly the rural poor, has already spent itself out. One of the main reasons behind the failure of Sajha programme is that it was replicated massively within a limited time span without any effort of developing the existing societies as people's own institutions geared to their needs and concerns.

3.2 The Area Development Approach

The approach includes a number of rural development programmes such as district development programme, local development programme, remote area development programme and the integrated development programmes initiated particularly after the late-seventies. A separate Ministry of Local Development was established in 1980 with a view to implement these programmes more expeditiously and effectively through coordination among various agencies.

Of all the programmes as above, integrated rural development programmes implemented in various areas of the country since 1978 appears to have a rational basis that coordinated and integrated effort among government agencies and the community is required to accelerate the process of rural development. It constitutes an integrated package of programmes covering economic, social, physical, and institutional aspects of the rural community.

But all of the programmes failed not only in delivering the goods to the needy people but also in mobilizing the people's participation, a kingpin factor to make any programme a success. People's participation in terms of planning, implementing and evaluating the programmes remained virtually non-existent. So much so that even the local level line-agencies whose commitment determines the successful implementation of the programmes, to a greater extent, remained hardly involved in the process of planning.

Another problem with the programmes is that they are more concerned to bridge-up the gap between urban and rural areas rather than narrowing down the structural inequality within the rural sector. As a result, most of the benefits accruing out of the programmes are cornered by the few rich resulting in further unhealthy and disproportionate accumulation of income and wealth with them.

3.3 The Target Group Approach

Failure to help the rural poor as above led the policy planners to a hectic brainstorming with a view to searching a viable and workable poverty alleviation model which, among others, could identify its target people, help them organize cooperation, and involve them directly, actively and creatively for their own betterment. As a result, new programmes based on target group approach were designed and incepted one after another after 1975. They include : Small Farmer's Development Programme, Production Credit for Rural Women, Intensive Banking Programme and others such as Banking with the Poor, the Food-for-Work, Nutrition Supplement Programmes, and some other programmes carried out by NGOs. A brief note on each of them follows:

3.3.1 Small Farmers Development Programme (SFDP)

Incepted in 1975 with one of the basic thrusts of uplifting the socio-economic conditions of the Small Farmers (SFs), SFDP is being administered by the Agriculture Development Bank of Nepal (ADB/N) since its inception. SFDP includes the following components into its service package with a view to achieve its stipulated objective.

- Organizing SFs into groups to help them realize what is possible through group's collective action;
- Generating savings from amongst the SFs in order to create their access to the new financial resources;
- Imparting need-based training to SFs to enable them manage new technologies and information for gainful opportunities;
- Involving SFs into implementing various social and community development activities which contribute to enhancing their level of knowledge together with increased productive assets both at individual and community levels; and
- Providing adequate amount of credit to SFs, on a joint liability basis, to enable them undertake any worthwhile project on production and income-raising activities.

3.3.1.1 Performance of SFDP

Initiated with the establishment of two Sub-Project Offices (SPOs), one each in Dhanusha and Nuwakot district of Nepal in 1975, SFDP covers 620 VDCs of 75 districts through a network of 422 SPOs by the end of 1993/94 mid-July. The total number of SFs' groups formed stands at 22,710 involving about 179 thousand households of which 4,484 groups are constituted exclusively by women involving as much as 35,112 women households (Table - 1).

Viewed from the activities SFDP has been implementing, it can be stated that SFDP is not confined to the credit part alone. It subsumes credit and goes beyond to incorporate a number of other activities which focus mainly on social welfare and community development aspects of the SFs (Table- 2).

Several studies done to assess the effectiveness of SFDP reveal its positive impacts on the target group. Such positive impacts are noticed not only on economic fronts but on other fronts as well (Table -3).

The number of utilized labour days has increased satisfactorily resulting from increased cropping intensity and livestock rearing activities. As a result, family income of the SFs has increased by 30 per cent with a linear average of 8 per cent per annum at 1981/82 prices.

Considerable achievements made in adult literacy and training programmes reveal the priority given to human resources development among the SFs.

Though the coverage of the programmes such as community irrigation and community drinking water seems to have benefited only a small number of SFs vis-a-vis the total population covered under SFDP, yet such programmes can result in enhancing the productivity of the resource base of SFs along with creating their community assets, if implemented both extensively and intensively .

Programmes relating to distribution of smokeless stove and vegetable seeds together with toilet construction symbolize the technology transfer drive of SFDP.

There are, however, some other observations also which indicate the weaknesses of SFDP. The 1991 Nepal Rastra Bank (NRB) study, while commending the positive sides of SFDP as above, pinpoints the followings:

- A significant number of medium and large farmers are also found associated with the SFDP, the share of landless farmers participating in the programme being only about 3 per cent.
- Fifteen per cent of the SFs' groups never convene their group meetings. SPO participation in the group meetings is virtually non-existent resulting in a lack of constant touch and interaction between the SPOs and the SFs.
- A majority of SFs do not still feel psychologically prepared to independently deal with outside agencies despite several years of SPO support to enhance self-reliance on them, and
- All SPOs in the hills and 60 per cent of the SPOs in the terai may turn into loss making units loosing much of their financial viability when interest earnings on non-performing loans (overdue for more than 6 months) are not treated as income.

In addition to what is stated above, the following issues need to be taken into consideration while assessing the performance of SFDP.

- During the period of 18 years of implementation of SFDP, it has been capable of forming only 22,710 SF groups involving 168,424 households. The population served by SFDP so far, therefore, stands at 943 thousand assuming that a household comprises of an average family size of 5.6 persons.
- The total number of groups formed by the end of 1979/80 was 634 while the same by 1993/94 reached 22,710 with an additional increase of nearly 1,577 groups every year involving 11,701 households on an average. Though the rate of annual increase in the number of household falling below the poverty line cannot be estimated easily, yet it may safely be stated that the rate of coverage falls far below the rate of increase in the number of poor given the recent estimate of as much as 71 per cent of the population falling below the poverty line from that of 42.5 per cent a few years before.
- According to an estimate of NPC (1983) the share of landless households in the country is 10.4 per cent. People belonging to such category need to be the first choice of any intervention aiming at poverty alleviation. The share of landless farmers participating in SFDP is however, too small as revealed by NRB study (1991).

3.3.2 Production Credit for Rural Women (PCRW)

Incepted in 1982 on a pilot basis, PCRW aims at developing an effective delivery mechanism to channel resources to rural women. It involves both the credit and non-credit activities. The two government owned Commercial Banks (CBs), namely Nepal Bank Limited (NBL) and Rastriya Banijya Bank (RBB), together with the ADB/N participate in the credit activity. The non-credit activities under PCRW are being funded by UNICEF from the very beginning.

3.3.2.1 Performance of PCRW

As of July 1993, a total loan of Rs. 72 million was disbursed by some 73 branches belonging to the three participating Banks. The number of borrowers stands at over 15 thousand rural women belonging to 49 districts. PCRW is recently extended to 15 more districts to cover a total of 64 districts of the country.

Two evaluation studies (the first one in 1985, and the second in 1989) done, so far, do not tell much on its contribution on quantifiable terms. However, available information tend to give an impression that participating women have been able to enhance their household income resulting from the increased economic activities especially on agriculture and livestock rearing.

Training component in PCRW seems to have been heavily emphasised particularly in the areas related to income generation, and health and hygiene. Available data reveal that most of the women under PCRW are imparted training more than once.

Credit under PCRW is advanced without collateral. Yet the total amount of credit disbursed remains quite small keeping in view of the coverage PCRW has made so far. This may be due mainly to the smallness of loans, on one hand, and a larger number of borrowers, on the other, resulting in an unwillingness among the participating Banks to go in for.

The smallness of credit disbursed under PCRW may also be attributed to the fact that it is not primarily a credit programme. It is rather a general development programme for women which uses credit as an entry point to organise women groups as vehicles for activities like literacy, health and family planning and small public works. It is believed that 60 per cent of its costs are non-credit related.

The problem associated with PCRW is that it has remained one of the costliest poverty alleviation programmes as yet. Viewed from the number of total staff involved vis-a-vis the total number of beneficiaries served, an employee under PCRW caters to the needs of less than 32 beneficiaries as against more than 140 in SFDP (Khadka, 1992: p. 8).

3.3.2.2 Some Other Institutions Dealing with Women

Efforts are being made to create institutional responsiveness under which due concern could be given to women. This is well documented in most of the development rhetorics including the development plans. As a result, new institutions are being created and the existing ones reorganized. In all, such institutions include the followings:

- The Women's Development Division in the Ministry of Labour and Social Welfare;
- The Women's Development Division in the Ministry of Local Development (strengthened and upgraded from its earlier section level);
- Two Regional Rural Development Banks (RRDBs), one each in Biratnagar (Eastern Region), and Dhangadhi (Far-Western Region) representing an innovative outreach model of that of Grameen Bank of Bangladesh for assisting the poorest among women living in remote areas; and
- A number of research and action groups established as NGOs in the private sector.

Assessing the performances of each of the institutions as above except that of the RRDBs may have its own share of problems, for many of them particularly the NGOs are characterised by multiplicity of activities together with their everywhere-ness especially in most of the urban and semi-urban areas. It is, however, assumed that they have been doing some thing albeit at a small scale. A brief highlight on some of the selected NGOs submissive to poverty alleviation endeavour in Nepal is presented herein after.

The two RRDBs started their operations in the middle of 1993. So far, they have organized 4,320 women into 864 groups and have disbursed a loan amounting over Rs. 9.7 million. The loan ceiling does not exceed more than Rs.5,000 per borrower.

3.3.3 Intensive Banking Programme (IBP)

In a bid to give CBs a rural-oriented look, NRB directed them in 1974 to invest at least 5 per cent of their total deposit liabilities to the small sectors consisting of agriculture, cottage industries, and services. The small sector was redesignated as the Priority Sector in 1976 and the level of lending was elevated to 7 per cent of their deposits. The Priority Sector was, however, once again renamed as Intensive Banking Programme (IBP) in 1981 with a mandatory requirement that 60 per cent of its loan be channelled to the low income rural people on a group guarantee basis. Another change took place in 1986 resulting in an increase in the lending limit of CBs under IBP from 7 to 12 per cent of their total loan portfolio.

The IBP would have shadowed all other programmes including even SFDP in terms of poverty alleviation if it could have achieved its objective particularly in advancing credit to the tune of mandatory arrangements. But the loan disbursement under IBP never crossed more than 2 per cent of the total loan portfolio of CBs. The main reasons behind such a poor performance of IBP include : (a) relatively a higher overhead costs against the total loan disbursed - 18.4 per cent in rural areas and 5.2 per cent in urban areas, (b) reluctance on the part of CBs to bear the loan risks which remain relatively higher because of collateral-free loans, and above all, (c) lack of motivation among the CBs leading to non-departure from the existing go-easy culture with limited and secured lending which hardly pose any risk.

3.3.4 Other Programmes

In addition to what has been mentioned above, it becomes appropriate to state here some other programmes also. They include : Banking with the Poor, Food-for-Work programme, and Nutrition Supplement Programme. Necessary details follow here under :

3.3.4.1 Banking With The Poor (BWTP)

BWTP aims at reaching the poorest of the poor either through NGOs or through the grass-roots level self-help groups (SHGs). In order to target and reach the poor people effectively, it aims at using the NGOs and SHGs as intermediaries between the Banks and the rural poor.

RBB initiated the scheme in 1991 on an experiment basis. Though the coverage of area and beneficiaries is too small yet, the experiences and achievements so far made reveal the fact that the poor are very much bankable - a fact which is universally accepted. Such a finding can result in motivating the financial institutions which often show their helplessness to finance the rural poor for they believe that the poor are non-bankable because they cannot handle resources efficiently and productively.

3.3.4.2 The Food-for-Work Programme

Supported by the World Food Programme (WFP), this scheme aims basically at providing employment opportunities to the poor particularly at times when no other avenues of employment are available. The food provided under the scheme is being used particularly on the activities such as

road construction, irrigation project installation and rehabilitation. The scheme so far seems to have really reached the poor. Initiated some 10 years before, the scheme is understood to have benefited some 8 thousand people every year. The potential impact of the scheme on food security is quite large and provides about 1 million days of employment per year - 6,600 full-time equivalent jobs (World Bank/UNDP, 1990: p. 102). It pays an in-kind ways, the value of which is primarily attractive to the poor.

It is however, confined to a narrow coverage, for the assistance available under the scheme amounts only about 2 thousand metric tonnes of the food grains which falls far below the magnitude of requirement given a large number of people looking after such assistance (Khadka, 1992: p. 8).

3.3.4.3 Nutrition Supplement Programme

Also assisted by the WFP, the target people of the programme remain basically those who remain deprived of a minimum amount of nutritious food throughout the year. It covers a wide range of areas and distributes foods to the malnourished children and women, local primary schools, and the child care centres.

The project seems to have a good coverage in that it involves some 200 thousand people and distributes upto 5,500 metric tonnes of food a year (Ibid p. 96). The distribution of food to women and malnourished children is the major objective of the programme. Under the scheme, children are screened once a year and are provided supplementary food, if found malnourished. Pregnant and lactating women remain the first choice while providing foods.

The problem of identification of the target people is, however, noticed, for the foods are often distributed indifferently without giving proper attention to the income level of the beneficiaries.

3.3.5 NGO Programme

A number of NGOs are also involved in poverty alleviation interventions in Nepal. Though the assessment of their performance in terms of coverage places them nowhere near to satisfaction, yet their growing involvement in reaching the rural poor with efforts and inputs tend to indicate their enthusiasm to contribute to poverty alleviation endeavour in Nepal. Some of the selected NGO-led programmes are discussed below.

3.3.5.1 Centre for Self-help Development

The Centre for Self-help Development (CSD), a national NGO was established in 1991 with the mandate to work for and with the rural poor and the underprivileged to create need and value-based self-reliant societies. The main intent is to promote self-help groups and people's organisations at the grassroots level as the basic mechanism of enhancing the capability and capacity for poverty alleviation and ultimate human development. The basic role of CSD is to act as a change-agent and development catalyst to achieve:

- Enhancing productive capacity and income level through mobilisation and utilisation of local resources and skills.
- Strengthening the local capacity to plan and implement socially and economically viable and environmentally sound and locally sustainable development activities; and
- Enabling the target people to shape and better their own future by themselves and leading them towards ultimate self-empowerment for their socio-economic progress.

Rapport building and establishing partnership with both the governmental and non-governmental agencies associated with development to channelise the external resources, technical support to the grassroots communities to stimulate and complement local initiatives for self-help development are the stipulated core strategies of the CSD.

Community Self-help Development Project in Jumla, Community Development Project in Kalikot, Environmental Awareness Action-Research Project in Dang and Salyan and Self-help Banking Programme in Saptari, Siraha and Udaypur districts are the core areas that the CSD has intervened so far. Continuing Training Programmes for the INCOs, NGOs and Community Based Organisations engaged in community development programmes also include one of the major activities carried out by the CSD. Institutional building supports, savings and credit, income generation and marketing, women in development, environment and technology, health and sanitation and literacy and awareness include the kingpin components of the activities implemented under the CSD programme.

CSD is able to establish nine Self-help Development Associations with 61 self-help groups comprised of 411 members by the end of FY 1993/94. In the process, the members were able to generate NRs. 289,390 worth of savings in cash and grains, loan amounting NRs. 486,224 was advanced to the members for micro-enterprises. In endeavour of catering to the needs and discern the concern of women, 21 groups involving 151 women are formed. The women groups are accessed to institutional credit services for income generating activities with no tangible collateral. They have been able to generate NRs. 80,164 as savings. Provision of assured market for the produce is equally strived for by the CSD. It also publishes a wall newspaper designed in the manner that carries the message to encourage the target groups to join and participate in community development activities and activate themselves in social improvement endeavour.

The CSD reports the outcome of its efforts as:

- Creation of feeling that one has to put efforts in one's development without looking or waiting for external assistance has been seen, well entrenched in the head and mind of the participating members;
- The saving and credit programme has provided respite to the people from the high interest clutches of the village money lenders and opportunities to raise their income through the undertaking of gainful activities;

- General improvement in sanitary conditions both in and around the rural households as well as improvement in trails and pathways and smokeless stoves and sanitary latrines inside;
- Practices of vegetable growing and its consumption at the household level are gaining momentum;
- As a result of increased awareness, the need for community activities has been increasing in terms of constructing public utilities like school buildings, community halls and latrines;
- Enhanced participation of women in training, workshops and group meetings and their engagement in diversified activities like rabbit raising and other small enterprises; and
- Development of reading, writing and numeracy skills and increase in awareness about self-potentials among the participating members.

Continuous formal and informal dialogue, interaction and training/workshop/exposure prior to organising the target people into self-help action groups as the mechanism of starting development activities and institution building and implementation approach fitting to the local needs are the crucial processes for the poor and disadvantaged groups to realise their self-potentials and come to the fore front for their own development together with the development of the community.

Efforts to create confidence on the self-potentials for own development rather than the strategy that leads to the dole mentality "*some body helps to develop me*" is a worth replicable strategy of CSD to other poverty alleviation programmes of the country. Process adopted by CSD for empowering the socially weak, poor and disadvantaged group through organisation building process is one of the ultimate means to exert a buoyancy of pressure both to the development agencies, policy planners and politicians at the different rungs of the society. This strategy is a viable one especially in the multi-polity condition of present Nepal.

Despite the rosy scenario upcoming in the programme areas of the CSD, the level of cost and intensity of tangible and intangible inputs involvement may limit the replication of CSD model *per se* for the financial and human resource is exorbitantly a major constraint in anti-poverty drive in Nepal. Alleviation of poverty of socially weak, disadvantaged and poorer section of the society should however, not be confined to economicism, if the national thrust is to achieve the development with human face.

3.3.5.2 Support Activities for Poor Producers of Nepal

Support Activities for Poor Producers of Nepal (SAPROS), a national NGO instituted in 1990 with the mandate of extending its hand to national poverty alleviation endeavour has been concentrating its efforts in five VDCs of Gorkha district. It is a Grass-Roots Level Institutional Development Programme to help the poor with the financial support of German Technical Cooperation (GTZ). The programme initiated on a pilot basis in Ghyalchowk and Bhumlichowk VDCs of Gorkha district as its area

of operation in 1991 was later extended to three more VDCs of the same district namely Tanglichowk in 1993, Makaising and Ghairung in 1994. Participation of target population in all stages i.e. conception, planning, and implementation, is the stipulated strategy of SAPROS programme activities.

The programme comprises of : (i) Organisation Development, (ii) Community Development, (iii) Resource Generation, (iv) Income Generation, and (v) Human Resource Development. Each of the components is interlinked in a manner that aim at creation of synergistic interrelation with each other.

Local Contact Persons (LCP) after the job-orientation training, do act as local level catalysts for the programme planning and implementation and are therefore trained accordingly. While selecting the LCPs, 3 to 4 out of every nine (one each from a ward) are expected to be women. Formation of focus population into groups and their federation into Intergroups at ward levels and the Intergroups again federating into the Main Committees at VDC level is the organisational structure of the programme beneficiaries.

Users groups are supposed to be involved in the implementation, operation and management of community projects.

In process of institution development, two Main Committees have already been registered as local NGOs and one adhoc committee is reported to be in line for registration process. Altogether 22 user groups for drinking water, 6 for irrigation, and 15 for forest conservation are reported to have been formed and have started implementing community projects. Community building constructions, rehabilitation of local schools, construction of suspension bridges, conservation of community forest etc. are the main activities carried out under the SAPROS programme. Community participation based on demand-driven approach seems to be the *prima facie* of community infrastructure development programme of SAPROS.

On the whole, a total of 2,520 members belonging to 259 groups are reported to have been brought under the ambit of different activities implemented by SAPROS so far. A noteworthy achievement it has been able to make could be seen in terms of helping the people mobilise resource equivalent to Rs. 1,531,160 during the three years of its operation (1991-94).

Community based livestock insurance scheme is another important facet which aims at encouraging livestock development by covering the risk in case of death of animal. This scheme is also conceived as an instrument for generation of additional resources to the local institutions constituted by the beneficiaries since the premium paid by the members works as a revolving fund to them.

The programme of SAPROS is geared towards creation of self-propelled people's own institution capable of harnessing the existing potentials at the local level, help people to improve their life and situation on a self-governance modum and exert buoyancy of pressure to the policy planners to discern the concerns and cater to the needs of local poor so far bypassed by the mainstream development. Similar type of effort,

however, has been noted to have already been taken by SFDP aiming no less than at creating local organisations as a process of entrusting them with the responsibility of working as financial intermediaries together with catering to the social needs of the rural poor affecting their entire spectrum of life.

Of the many efforts of SAPROS to help the rural poor with adequate means and resources, labour certificate scheme incorporated in the community development activities is an unique one that creates savings from the poor with the conversion of labour into capital.

3.3.5.3 Rural Self-Reliance Development Centre (RSDC)

Initiated by Integrated Development Systems (IDS) in 1985 in a locality in Palpa with the objective of radically addressing the social and economic dimension of the rural poor, the programme was popularly known as the Self-Reliance Development of the Poor by the Poor (SDPP), to begin with. With the reorganisation of IDS into Institute of Integrated Development Studies (IIDS), a new organisation - Rural Self-Reliance Development Centre (RSDC) was registered. In the process, the self-reliance programme was partitioned with the compromise that the programme in Palpa would go to RSDC while that of Lamjung to IIDS.

The basic philosophy of RSDC is that development is not a free gift that comes from the outside. It arises out of an awakening in the local community that they are to exert efforts for regaining control over their lives themselves. This is what the RSDC intends to make the people realise. The basic objective of RSDC is to motivate the poor households in relation to: (a) have faith and confidence in themselves, (b) understand their own socio-economic milieu, (c) understand the values and norms of a democratic society, (d) better manage their resources, and (e) take advantage of technology and services that are easily available and understood.

The self-reliance programme under RSDC has completed its nine years. The programme has covered 26 VDCs in Palpa covering 139 income generation groups (IGGs) involving a total number of 4,187 households as members. Such IGGs are encouraged to set-up their own self-reliance development fund to finance their urgent household and social needs. Each member contributes a monthly membership fee ranging from Rs. 2 to Rs. 20. The thrust behind such provision is to eventually build a community fund based on local contributions.

The entry point is the loan that is made available to individual members from the RSDC fund upon formation of IGGs by them and when paid back, capital is returned to the RSDC Loan Fund, while the interest is transferred to the Group Savings Fund. Total self-reliance fund in Palpa within a period of nine years is estimated at more than Rs.1 million.

Assessment of performance of RSDC according to An Evaluation Report (1994) includes the following issues:

- The IGGs lack enough resources especially to lending fund to their members for buying seeds and technology/ies to meet their growing expectation. Members have to wait for a long time to

receive the loans which is so small in size that it hardly covers the expenses of the proposed activities. This has caused dissatisfaction among the members.

- Notwithstanding these problems, villagers are found to be optimistic towards better lifestyle. The meeting of IGGs discuss the fundamental issues like "*why are we poor? and, how can we improve our lifestyle?*". Added to this is the systematic habits of personal savings and thrift among the IGG members resulting from non-consumption of liquor, and strict prohibition against gambling and playing cards. The village shops do not sell playing cards because of the regulation of IGGs.

The RSDC model is now replicated also in non-Palpa area including the remote parts of Dhading district. It has been capable of awakening the local people for their self-development, wherever it has reached so far.

4. An Assessment of Critical Factors for Poverty Alleviation and Possible Strategies and Programmes for Its Effective Implementation in Nepal

The most critical issue to alleviate poverty in Nepal lies in creating conditions for the poor to earn more from their work for they seem to have been locked into a low productivity trap. Wriggling them out of it involves not so much in making a little amelioration here or an attempt at improving a little bit there, but a persistent effort in resolving a couple of issues related to social, economic and institutional aspects of the rural poor. A brief note on them follows:

4.1 The social Issues

4.1.1 Women Related Issues

Women constitute more than a half of the total population in Nepal. Yet they are usually disadvantaged in terms of access to opportunities and services. Be it in terms of benefiting from the institutional services such as income generation-based training, credit, and other complementary inputs, or having access to positions and power, or participating in the national politics, females in Nepal lag much behind vis-a-vis their male counterparts. A recent UNDP report on the Human Development (1991) documents the fact that there exists a wide disparity in Nepal in education and labour force participation between males and females which, in turn, causes further inequality among them.

Poverty in Nepal is, therefore, also a function of gender disparity. Institutions related to *women in development* are being introduced in the country to deal with the problem of women. Such institutions may mean much by way of improving the equity aspects of growth, for they take a basic departure from the *women only* concept and view the women from the perspective of the social and economic framework within which they live.

Such institutions need to focus on a twin-issue in order to improve the equity aspects of growth, if they are to deal with women at all. First, they should aim at increasing the labour force participation of females by way of providing them educational opportunities aiming mainly at

educating them regarding the importance of fewer childbirths. Second, they should also aim at developing and creating infrastructure particularly related to water supply and fuel and fodder system so as to free them up reasonably from the time they spend on the household chores.

4.1.2 Human Resources Development Issue

Resources remain scarce everywhere and they remain more so in countries like Nepal. But it is not the lack of financial resources that causes the problem of human neglect and deprivation that Nepal has been facing so far. It is rather the waste of resources and loss of opportunities resulting from many more problems, the major among them being inefficient functioning both at government and public enterprise levels and the rampant corruption prevailing in the country. These problems if honestly done away with can result in restructuring both national budgets and international aid in favour of human resources development.

Expenditure on human resources development in Nepal is disturbingly low with only 4.3 per cent of GNP (NFC/UNICEF, 1992: p. 36). A set of services reflecting the choices of the poor such as education, health and population planning, water supply and sanitation, and local development fall within the purview of human resources development functions. Larger the volume of expenditure on such services focusing mainly on the poor, faster the pace of poverty alleviation drive in Nepal.

4.2 The Economic Issues

The government's general economic programmes are intended to promote overall growth than to benefit the poor specifically. This seems to have however forgotten the *system rationality* in that poverty everywhere is more an outcome of economic system. One of the valid questions in Nepal is therefore not whether the development strategies can afford to include the poor, but whether they can afford to exclude them.

The effectivity of development strategies aiming at poverty alleviation interventions in Nepal depends heavily upon strengthening the productive capabilities of the rural poor. This again depends much on a set of measures many of which may not involve more expenditures but a continuous effort on the part of the policy makers to review and reform the existing policies which hit hard especially the poor. Mobilising and enhancing the ability of the poor to help them increase their income and contribute to overall growth of the economy in Nepal involves a set of economic measures. Some of them include : improving poor people's access to land, improving the productivity and use of rural labour, searching for new sources of income, making more capital available to rural poor, and reforming the government policies which contradict the poverty alleviation objective.

4.2.1 Improving the Access of the Poor to Land

This measure involves land reform, land-titling and optimum use of land by providing necessary support services such as irrigation, new technologies and improved infrastructures. Nepal does not have

significant reserves of cultivable virgin land for bringing into additional use. There is therefore limited scope for poverty alleviation through redistributive measure. The need is for targeted growth.

At least for the medium term, increasing the incomes of the poor will have to rely largely on agricultural intensification. This is not impossible as yet. It is believed that nearly one-third of the agricultural poor in the hills and two-fifth in the terai own enough land (about 0.45 to 0.6 ha.) to potentially raise themselves above the poverty line through agricultural improvements fuelled particularly by irrigation facilities (World Bank/UNDP, 1990: p. 109).

Attempts at developing irrigation infrastructure need to be focus more on village-based small scale schemes in which water users themselves assume the burden of system maintenance and water management. Strong linkages between the rural poor and the extension workers need to be developed by giving a new vision to the existing Contact Group Method so that it results in increasing the number of SFs directly communicating with extension services.

4.2.2 Improving the Productivity and Use of Rural Labour

The agricultural land base is rapidly approaching saturation. There is however scope for increases in both labour absorption and agricultural productivity of the poor. Agricultural research corroborates a fact that a shift from rain-fed agriculture to the irrigated one results in increasing the labour demand by about 130 days per hectare per year (World Bank/UNDP, 1990 p. 60). Reaching them, of course, requires a more subtle blend of agricultural interventions than what it has been tried so far.

A two-pronged policy package emphasizing on labour absorbing measures and better training opportunities to the rural poor for developing new skills may result in improved productivity together with increased use of labour. Capital intensity needs not be promoted in Nepal which faces an acute problem of scarcity of capital on the one hand, and abundance of labour, on the other.

4.2.3 Searching for New Sources of Income

An average rural household in Nepal owns such a miniscule farm which cannot survive as independent business unit even with technical and capital assistance. As a result, the food grains produced out of such farm hardly suffice for 3 to 6 months of a year for a given size of family. Though much of the required income will have to be generated still from the agriculture sector with increased irrigation facilities and multiple cropping practices, yet growth of other activities in rural areas resulting in the creation of compensatory sources of income is a must.

Given the limited cultivable land base, agriculture alone cannot ultimately be relied upon to provide the solution to poverty in Nepal. The basis for long-term growth must eventually be sought in the expansion of services, energy and industry. However, growth in modern sector does not tend to reach the rural poor except in selected cases.

Therefore, it calls for exploring the location-specific and site-dependent off-farm activities which ensure self-employment to the rural poor. Schemes such as afforestation and tree tenure, food-for-work and nutrition supplement can be of much use in creating new sources of income to the poor, if such schemes could widely be implemented with substantial coverage.

4.2.4 Making More Capital Available to the Rural Poor

As long as the poor remain under-capitalized, they may not turn to more expensive but profitable undertakings for the new farming technology (which has proved to be size-neutral) is not resource-neutral. Since the risks appear to be greater among the poor, technological improvements must often be embodied in more capital. The poor may not invest in even in traditional methods of soil and water conservation in want of resources which may result in living in areas of extreme environmental fragility.

It has well been documented in many Asian Countries that the poor farmers can increase their crop income considerably notwithstanding the smallness of their holdings, if helped with necessary resources and guidance. Such a change everywhere is typically effected on the basis of credit. But institutional credit schemes have a very narrow coverage of 35 per cent in Nepal (NRB, 1994) in general and more so in-so-far as reaching the poorer segment of the rural population is concerned. Performance of SFDP, PCRW, IBP and other targeted credit programmes seems to be nowhere near the level of requirement, for a large segment of the rural poor is not yet brought under the ambit of the institutional credit system. This calls for a rapid expansion of the institutional credit facilities and deliberate efforts to cover the rural poor along with the improvement of the effectiveness and efficiency of the existing rural credit system.

4.2.5 Reforming the Government Policies

4.2.5.1 Population Control Policy

Curbing population growth is another area which is by far the central and single most important poverty alleviation strategy for Nepal. It requires a drastic national campaign. However, it remains nowhere in Nepal in terms of investment, for empirical observations suggest that Nepal spends only about US\$ 0.10 per capita on population activities while the same in India and Bangladesh is about US\$ 0.50 (World Bank/UNDP, 1990 p. 83).

One of the major forces contributing to poverty in Nepal is the accelerated population growth. There is no sign of population increasing at a slower rate in the near future for the rural households still favour large families. This is because, as long as the poor people remain poor, they will opt to go in for begetting more children for the amount of labour available to them determines their household income. This may result in a high rate of population growth to continue in the years ahead which may restrict even the future possibility of

development. Effectivity of poverty alleviation interventions therefore depends much on the progress that may be achieved in checking the population growth either through the existing policies or through reforming them in a manner that fosters demand for small families of not more than two children.

4.2.5.2 Education Policy

There is a need of adequate financing for expansion of primary school system to provide almost universal coverage. It is because education results in increasing the agricultural outputs impacting mainly on the use of modern inputs. There has been substantial research on the productivity effects of education in developing countries which indicates that agricultural outputs increase by about 10 per cent as the result of primary education alone (Ibid p. 80).

4.2.5.3 Urbanisation Policy

Though Nepal is one of the least urbanized countries in the world, yet average annual urban growth rate is the highest in Nepal among the SAARC countries. As a result, severe pressure is being built-up which calls for a further investment on the urban physical infrastructures such as roads, health, drinking water, and transport services which have already got more than a fair share in terms of investment. This again tends to leave inadequate resources for the development of the rural sector. Much can still be done to check the urban population growth rates by way of reforming policies making them aim, either at creating employment opportunities in rural areas or at shifting some of the undertakings such as carpet and garment industries from urban to rural sector or at doing both at one stroke.

4.2.5.4 Resource Utilisation Policy

One of the major problems Nepal has so far been facing is the inability to utilize the available resources rather than mobilizing the additional external resources. Not even one half of the foreign aid assistance committed on the part of donors is utilized every year. A low absorptive capacity like this calls for selectiveness of the projects that focus on the poor on the one hand and shaping the development administration attuned to raise the utility and productivity of external resources with their optimum use, on the other, in order to provide a new impetus to the poverty alleviation interventions in Nepal.

4.2.5.5 Public Enterprise Policy

Despite the protection given to the public enterprises for a long period, the financial competence and efficiency of many of them have deteriorated. Returns on investment have remained not only minimal, but have also put great strains on government resources which could otherwise be channelled to the rural sector aiming at the poor.

4.2.5.6 Subsidy Policy

A large amount of money is being spent every year for the supply of subsidized fertilizers and foods in a bid to help the poor. It is however, observed that the poor have hardly got substantial benefits out of the scheme for the major chunk of the subsidized services reach only to the socially influential groups.

The fertilizer subsidy involves both transport and price elements. But it has very little impacts on the poor because:

- fertilizer use by poor farmers has remained low even if it is available to them, for it is high risk strategy to them in want of irrigation (Ibid p. 92); and
- the supply system of fertilizer is not reliable, for it remains unavailable to the poor farmers at key times.

Similarly, major part of the subsidized food distributed through the National Food Corporation is mainly confined to Kathmandu valley and to the civil servants. Probably less than 25 per cent of the food so distributed reaches to those living in remote areas.

It is therefore, widely believed that the poor in Nepal may gain from the elimination of such a policy-based subsidy provision if alternative arrangement could be made to channel the resources involved therein to the poor focusing tightly on them.

4.3 The Institutional Issues

The advent of pluralism in politics does not end itself in the creation of political institutions alone from top to bottom rungs of the social ladder. It gets its minimum requirements fulfilled with creation of such institutions, yet it should further opt to go in for developing a number of other community-based institutions to strengthen oneself and to correspond to the economic, social and community interests of the rural poor. This, in essence, calls for creation of such institutions which instil democratic and participatory values at every level in society and not just at the level of nationwide institutions.

One of the problems in Nepal is that such indigenous institutions are very limitedly used as vehicles to cater to the needs of the poor notwithstanding their existence into a large number in the form of Guthis, Users' Groups, Parma Groups, SHGs, SF Groups, School Management Committees, Mother's Groups, and local level NGOs, among others.

These institutions can contribute to poverty alleviation effort to a greater extent, if tapped and given the intermediary roles with a package of minimum support. The benefit of involving such institutions in poverty alleviation effort is that they can try more innovative solutions. They are not constrained by government staffing and financing procedures and can work intensively at the local level. Moreover, they can also operate free of the political and social constraints which often limit the capacity of government programmes to help the poor.

SFDP approach of creating SFs' Cooperatives in Dhading district under the technical assistance of the Government of Republic of Germany is a welcome move. This approach aims at not only seeking NGO involvement in SFDP- operation but also at creating local NGOs constituted from amongst the SFs so as to give them the intermediary roles between SFDP and the small farmers. This approach should, therefore, be replicated elsewhere in the country. Attention should however, be given to replicate it selectively but steadily.

Keeping in view of the sustainability and financial viability of some of the target group-based credit programmes implemented in Nepal, creation of some new institutions seems to be in offing. One of them might be, for example, the establishment of a Small Farmers Development Bank which could incorporate financing for SFDP, PCRW and IBP keeping them outside the banking system of the ADBN and CBs. The non-credit costs of such a bank should however be subsidized by the government.

Poverty alleviation in Nepal has remained the central theme and is believed to remain so for the foreseeable future calling for a major attention from all the corners including the donors. As evidently clear from the foregoing discussion, a number of programmes are in operation to alleviate poverty in Nepal. No any workable and viable official definition is however, yet developed (with the presumption that the one adopted by the Basic Need Programme is inconsiderable now) which could enable the programme implementors to detect a member from a poor zone entering into a non-poor one. In absence of such a definition, poverty alleviation programme in Nepal may stagnate in terms of its coverage resulting from a situation where the people brought under it may remain served for a longer period knowing not that they remain no more poor.

One of the most important conclusions emerging here from the foregoing discussion is that there is no any easy poverty alleviation strategy for Nepal. Even then significant gains can be made through a combination of measures mostly involving increased labour absorption in agriculture coupled with productivity gains in low-input farming systems, informal sector growth, and some redistributive measures aiming at growth with equity, if tightly focused and managed in a way that would allow the poor to help themselves. The dynamics of poverty may therefore, be reversed but only through a process of collaboration with the institutions constituted from amongst the poor, for they are the ones who can act much more purposefully.

Table - 1

Expansion and Loan Disbursement
Performance of SFDP
(1975/76-1993/94)

No.	Description	1975/76 - 1992/93	1993/94	Total
1.	No. of SPOs	395	27	422
2.	No. of VDCs Covered	505	115	620
3.	No. of Groups Formed:	<u>19,827</u>	<u>2,883</u>	<u>22,710</u>
	Male	16,184	2,042	18,226
	Female	3,643	841	4,484
4.	No. of SFs Involved	<u>151,883</u>	<u>16,541</u>	<u>168,424</u>
	Male	120,386	12,926	133,312
	Female	3,1497	3,615	35,112
5.	Loan Investment (Rs."000")	1,827,328	520,897	2,348,225
6.	Loan Collection (Rs."000")	1,023,858	327,805	1,351,663
7.	Loan Outstanding (Rs."000")	817,356	992,659	992,659
8.	Loan Overdue (Rs."000")	279,432	285,515	285,515
9.	Repayment Rate (percent)	39	44.61	44.61
10.	Savings Generation (Rs."000")	32,081	8,313	40,394

Data source: ADBN, Head Office

Table - 2

Some selected non-credit activities implemented through SFDP
(1975/76-1993/94)

No	Description	1975/76 - 1992/93	1993/94	Total
1.	No. of Training Programs	2,471	223	2,694
	No. of Participants	66,424	5,076	71,500
2.	<u>Adult Literacy Program</u>	<u>69,750</u>	<u>23,386</u>	<u>93,136</u>
	No. of Beneficiaries			
	Male	31,597	9,211	40,808
	Female	38,153	14,175	52,328
3.	<u>Community Surface Irrigation</u>			
	No. of Projects	217	71	288
	No. of Beneficiaries	12,693	3,141	15,834
4.	<u>Community Drinking Water</u>			
	No. of Projects	241	368	609
	No. of Beneficiaries	1,928	2,944	4,872
5.	<u>Early Child Care and Education</u>			
	No. of Child Care Centres	32	32	32
6.	No. of Beneficiaries	3,100	4,060	4,060
7.	<u>Tree Plantation</u>			
	Tree Planted (No.)	1,079,847	523,225	1,603,072
	No. of Participants	12,930	6,279	19,209
8.	<u>Vegetable Seed Distribution</u>			
	No. of Packets	572,662	19,000	591,662
	No. of Beneficiaries	58,166	1,000	59,166
9.	<u>Smokeless Stove Distribution</u>			
	No. of Stoves	3,768	2,373	6,141
	No. of Beneficiaries (Family)	3,768	2,373	6,141
	<u>Toilet Construction</u>			
	No. of Toilets	3,845	1,856	5,701
	No. of Beneficiaries (Family)	3,845	1,856	5,701

Data Source: SFD Division of ADB/N.

Table - 3

Changes noticed among the SFs in terms of some selected socio-economic indicators

No.	Indicator	Situation		Change (Percent)
		Before SFDP	After SFDP	
1.	<u>Income in Rs. (at 1981/82 prices)</u>	<u>11,697</u>	<u>15,257</u>	<u>30.43</u>
	Farm income	9,056	10,818	19.46
	Off-farm income	2,641	4,439	68.08
2.	<u>Employment</u>			
	Available labour days	33.5	33.5	-
	Utilized labour days	16.3 (48.66)	21.3 (63.58)	14.92
3.	<u>School enrolment (per cent)</u>			
	Boys	55	74	
	Girls	30	41	
4.	<u>Adult literacy rates (per cent)</u>			
	Male	59	76	
	Female	15	28	
5.	Families adopting family planning measures	25	30	
6.	Population having access to drinking water within a fifteen minute distance (percent)	65	89	

Note: Figures in parenthesis indicate percentage to the total available labour days.

Data Sources:

- (1) An Ex-post Evaluation Study of IFAD Assisted SFDP-Phase I, 1987, APROSC
- (2) An Study on Employment Generation Through SFDP, 1988, APROSC.

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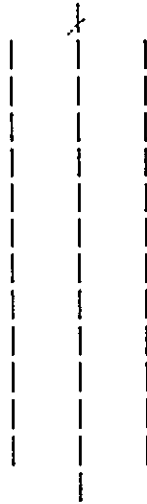
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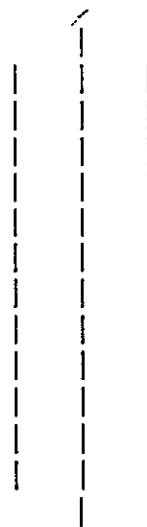
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**STUDY OF
WOMEN IN DEVELOPMENT
WITH SPECIAL REFERENCE TO THE
AREA SURROUNDING THE PROPOSED
BANEPA - SINDHULI ROAD CORRIDOR**



**BY
PADMA MATHEMA**



JANUARY 31, 1995



S.No.	Content	Page No.
1	Introduction	1
2	A general profile of the role of women in Nepal	1
3	An overview of the dynamics of women's participation in development in Nepal	2
4	A historical perspective on different Women in Development (WID) interventions in the country and a brief assessment of their performance	3
5	An assessment of critical factors for a successful WID intervention in the country	7
6	A general description of the WID situation in the Banepa- Sindhuli road corridor	9
7	Development programme of the proposed road corridor district	9
8	Possible strategies and programmes for a successful WID intervention in the proposed road corridor area.	11
9	Some specific Activity	13
10	Tables	15
11	Annex 1	23
12	Annex 2	29
14	Reference Materials	31

Study of Women in Development with Special Reference to the Area Surrounding the Proposal Banepa-Sindhuli Road Corridor

1. Introduction

Human resource is the centre of development. Meaning thereby development is for the human resource, by the human resource, and of the human resource. In this connection, it is opportunity to quote Human Development Report- 1993 - "Development of the people means investing in human capabilities, whether in education or health or skills, so that they can work productively and creatively. Development for the people means ensuring that the economic growth they generate is distributed widely and fairly. Development by the people means on giving everyone a chance to participate" (UNDP 1992). The participation model of development states that in order to translate the goals of development in reality, mobilization of human resource in terms of quantity and quality is one of the pre-condition of development. Experiences so far gained by developed, developing and least developed countries shows that the degree of participation of women in development is one of the determining factors of development of the country concerned.

Women are a major labour force in agriculture, the backbone of the Nepalese economy. Socially, they bear the sole responsibility of the household. In spite of their vital role in the Nepalese development, they suffer from several socio-economic disabilities i.e. low access to education, health and property rights, formally un-recognized work in domestic economy, lower pay in jobs and insignificant representation in politics and administration. Socially and religiously, they are surrounded by too many restrictions and taboos which limits their participation in national development.

2. A general profile of the role of women in Nepal

2.1 Socio-cultural environment and status of women

Nepal is a Hindu kingdom with 86.51 percent of its population with Hindu religion. The other religions are Buddhist, Islam and Kiranti and they consists of 7.78, 3.53 and 1.72 percent respectively. The 1991 census records 62 ethnic groups under four major caste Brahman, Chetri, Vaisay and Sudra.

The spectrum of socio-cultural diversity ranges from the very orthodox Hindu Indo-Aryan groups to the relatively gender egalitarian Tibet-o-Burmans such as Brahman and Gurungs. The socio-cultural status of women is closely linked with orthodox and egalitarian beliefs against women.

Furthermore, Nepal is among the countries of the world with the highest son preference. Sons are preferred because they are required to perform religious functions specially after death-the rituals for salvation. They carry on family name and property by law and they are considered insurance against old age. By contrast, Nepalese women perform only secondary role in the religious

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Furthermore, Nepal is among the countries of the world with the highest son preference. Sons are preferred because they are required to perform religious functions specially after death-the rituals for salvation. They carry on family name and property by law and they are considered insurance against old age. By contrast, Nepalese women perform only secondary role in the religious functions. They follow husbands family name and have only the sentimental Paris for caring for parents. They enjoy only conditional legal right to property. That is, either they have to buy their own property, or they have to remain unmarried

upto 35 years of age to enjoy the legal share on parental property. Their right on husband's property is conditioned by different limitations.

3. An overview of the dynamics of women's participation in development in Nepal

3.1 Women and labour force in the economic sector

Women labour force representing nearly fifty percent of the total population are vital and productive workers. Economically active labour force as percentage of total population in Nepal constitute 70.2 percent of which 45.2 percent of women labour force has been recorded as economically active participators (Table No. 1)

Women participate more in agriculture which is 90.1 percent as against 74.9 percent for male. The women labour force in other sectors is minimal and ranges from 5.3 to 0.1 (Table No. 2)

Age specific economic activity rates by sex indicates that women labour participation is higher than men in the age group 10-14 and starts decreasing from 15-19 onwards (Table No. 3). The higher rate of women participation in the 10-14 years age group suggests this being one of the causes of lower enrollement of girls in the primary and secondary schools.

Different studies made on the participation of women in the economic sector have found that the household is the major work centre of the Nepalese women and she starts to work at the age of 6 years. All of these responsibilities are labour intensive, time consuming and limits access to other economic opportunities. The participation of women work can be analysed in terms of the inside-outside, private/public dichotomy between male and female world. The argeement is that women's invlovement in child bearing and rearing and then in domestic work has normally excluded them from public life and hence from power and authority at large.

3.2 Women and education

Nepal has made substantial progress in education since 1971-1991. The literacy rate increased from 13.9 percent to 40.0 percent and also the female literacy rate increased from 3 9 percent to 25.0 percent. Nevertheless, there is still a substantial disparity between male and female literacy rate and the primary and secondary enrollement. (Tables No. 4 and No.5)

Although, there is no legal limitation for the women's access to education, the socio-cultural and economic reasons limit it. The net enrollement rate of children in all the age group is lower but the enrollement of boys is twice the ratio of girls particularly in the rural areas. The gap widens further at the secondary and the higher level respectavelly.

3.3 Women and health

The health status of the Nepalese people in general though has been improving, it is low compared to other less developing countries. The health status of women remains still lower. The Table No.6 shows that life expectancy for men is 55.9 years of age and it is 53.4 years of age for female. Nepal is one among the three countries of the world with lower life expectancy for female population and the

other two being Bangladesh and Bhutan. The total fertility rate is 5.7 percent. The maternal mortality rate is 850 per 100,000 live birth.

The higher fertility rate, the higher maternal mortality rate and the lower contraceptive prevalence rate indicate that women are exposed to many diseases and death due to pregnancies and child birth. Further nutritional deficiencies makes the health problem more complicated.

3.4 Women in decision making

Despite more than three decades of development, gender gap in the politics and administration in Nepal is very wide. The provision made in the Constitution of 1990 provides that five percent of all candidates should be women for each party to run in the parliamentary election of the lower house and 3 women should be nominated in the upper house. In 1991 general election as well as in the 1995 mid-term election the women parliamentarians represent 3 percent of 205 lower house members. Participation of women in the District Development and Village Development Committees is less than one percent (Acharya -1994).

Similarly, the participation of women in general administration is also low. The proportion of women civil servant consists of only five percent of total civil servants. Low education level, rules and regulation of the Civil Council Act, household responsibilities, supplementary earning role of women can be regarded as some of the causes of lower participation of women in the politics and administration of Nepal.

3.5 Women and law

The Civil Code 1963 is the first significant law to give more rights to women. It has since gone through six amendments and has made some improvement in the areas of legal right to property, divorce and trafficking and rape of women and girls. The amendment gave a daughter who remained unmarried till the age of 35 an equal share of parental property as to her brother but has to return if she gets married. The study of the Civil Code 1963 remain discriminatory against women based on preserving patriarchal basis of society.

4. A historical perspective on different Women in Development (WID) interventions in the country and a brief assessment of their performance

4.1 International commitment

Nepal, entered in the era of development since 1955 specially with the implementation of the First Five Year Plan (1955-60). The programmes such as girls education, hostel for girls student in the education sector and family planning and maternal child health programmes in the health sector were the only visible female population targeted programme upto 1975. The other sectoral policies and programmes though were directed for both male and female population the benefit received by the female population were insignificant because of socio-cultural limitations against women in the Nepalese society. The

International Women's Year (1975) and the UN Decade for Women (1976-1985) helped the gradual realization of the vital role of women in national development.

Mexico World Conference -1975 held to observe International Women's Year 1975 provided World Plan of Action for Women with the objective of involving women in development to secure "Global Peace, Equality and Development." Later, the Convention on the Elimination of All Forms of Discrimination Against Women adopted by UN General Assembly and the Forward Looking Strategy - 1985 adopted by Nairobi World Conference attracted international and national attentions to recognize women as the productive labour force and as the equal partner in national development. A World Bank Policy paper announced only in 1994 on Enhancing Women's Participation in Economic Development states that improving women's productivity can contribute to growth, efficiency and poverty reduction. Key development goals everywhere. The policy propounds the gender and development approach and accordingly it distinguishes between practical and strategic need of women. "Practical needs refer to the demand for goods and services arising out of women's socially acceptable roles in society- such as the need for health care and drinking water supplies. Strategic needs refer to requirements such as equal employment opportunities and equal access to education and to productive assets, that would help women achieve greater equality relative to men by changing their position in society" (World Bank 1994).

4.2 National awareness

The first study on the problem of women was undertaken by Centre for Economic and Development Administration (CEDA) Nepal on its report "The Status of Women in Nepal" (Acharya and Benntel 1981) has provided substantive women specific data as well as policy recommendations necessary for enhancing the status of women in Nepal. Some of its conclusions of the study are as follows:

- a. The rural women's total work burden is extremely high in an average of 10.81 hours per day compared to 7.51 hours per day for men. While the employment survey of the study revealed that women had worked only 24.8 percent of the total person days of paid employment, this is not because women are under employed, but rather they are primarily engaged in non-market subsistence production.
- b. Rural Nepalese women contribute not only more time on work but also more income than men to the total household income. The women contribution is 50 percent versus 44 percent by men with 6 percent contributed by children.
- c. Women are primarily responsible for the farm enterprise both in terms of labour contribution and management decision. There are some major areas in which men play a dominant role.
- d. Because of women's socialization, lack of control over productive resources and drastically lower levels of literacy rate, the outside world of government agencies, politics, the market economy etc. is pre-dominantly understood and controlled by men.
- e. It is neither the cost of education nor the conservatism of the parents which is the responsible cause for lower percentage of female enrollment in the sample villages under study. Rather it is the family's dependence on girl's labour at home and in the fields that is the primary reason for keeping girl's out of school.

- f. In none of the communities studied, women have formal ownership or legal control over productive resource, despite their greater contribution in the economy. In Nepal, women in all communities are vulnerable to loss of their basic subsistence requirements.
- g. Women's roles in subsistence agriculture and the market economy are not reflected in any development agency strategies for extension, training, credit, employment etc. These strategies are almost targeted towards men. Consequently it has failed to mobilize the full productive potential of women and also to draw women into highly complex and increasing important structure of the development process and the wider spheres of society.

Following the World Plan of Action adopted at the Mexico World Conference in 1975, the National Plan of Action for Women's Development - 1982 was formulated and published by the then Women Service Co-ordination Committee under the then Social Service National Co-ordination Council. The plan covered the areas of education, health, employment, agriculture, co-operative, forest and legal sectors with women as target group. The Sixth Five Year Plan (1980-85) also included a national level policy of women's participation in development for the first time in the Nepalese plan document. Since then the Seventh Five Year Plan (1985-90) and also the Eight Five Year Plan (1990-95) has had a separate policy chapter on participation of women in development. The policy measures included in the women in development policy of the Eight Five Year Plan can be categorised in the four areas (a) Sector specific women programmes such as education, health agriculture, industry, forest (b) Women targeted income generating and participation programme (c) Women in decision making and law (d) Institutional development for women development. Fourteen different pro-women policy statements have been made in the plan document and include such important areas as special educational programmes for women, increased access to health facilities, targeting of credit facilities to women farmers. Development of Small Women Farmers and enhancing participation of women in rural infrastructural programmes.

4.3 Sectoral programmes

In tune with national commitment for women development as well as with policies of the plan His Majesty's Government has been implementing different programmes relating to women development. The programmes can be viewed from two angles. The first one is the general sectoral programme specially in education, health and agriculture sector in which the programme have been implemented with more women as the target group. Secondly, the women specific programme are under implementation in different sectoral programmes which is presented in Table No 7.

In addition to the government, national and international non-government organizations (NGO/INGO) are also emerging as supporting mechanism to launch projects for women development. According to the Social Welfare Council, the number of registered NGO of women development under the Council has reached 108. The number will increase if the NGOs for women development registered with the Chief District Offices is taken into account. Normally all of these NGO's are supported by INGO's such as Asia Foundation, World Neighbour, Luthern World Service, Redd Berna etc. The programme activities of these NGO's covers non-formal education, health and family planning, income generating activities, training activities for skill and leadership development and activities for legal

and social awareness. The priority of the activities vary depending upon the objectives of the respective NGO's.

An observation on the strength of these NGO's shows that the NGO's can play an important role in the development of local level activities. Since their programmes are based on wards and village and mobilizes local participation, they can be effective institutions at the grass root level for creating environment necessary for development.

However, NGO's in Nepal has some weaknesses, which has limited their effective contribution. They are centrally based and have implemented the programmes mostly in semi-urban areas. The analysis of 108 registered NGO's by location indicates that they are present only in 23 districts out of total 75 districts in the country. Nine districts of the central region has 83 NGO's and out of 83 NGO's 63 are based in Kathmandu alone. Criticisms are often made that they are donor-driven and that their activities dry away once the respective donor agency stops its contribution. Sustainability of the programme as well as the NGO it-self come as a big question. Further, these NGO's lack training in programming, coordination and management which limits the effective implementation of the programmes.

In spite of the present short comings of the NGO's, it remains that NGO's can serve as effective local level institution for the grass root level development activities. Although majority of the women NGO's have been established only after 1990, their programme at local level, study and research activities in the areas of women problems, information generation and acting as pressure group for women development can be listed as their major achievements. Experience of these NGO's show that establishment of local NGO's can be effective mechanism to implement women development programme at the village level to support the government programmes.

4.4 Assessment of some achievements

The review of these sectoral and women specific programmes in terms of achievement women in development provides signs of optimism. There are women agricultural assistants such as JT and JTAs and numbered 200 and 45 respectively in 1990. Specific policy has been adopted to include 25 percent of women as participants in different agriculture programmes and it is mandated that 10 percent of trainees in all programmes should be women farmers. In the education sector, the female teachers in primary, lower secondary and secondary education have been recorded as 14, 11 and 8 percent respectively. The HMG/N adopted a policy of the compulsory appointment of female teacher in the primary school as a means of encouraging parents to send their daughters to school. In addition to scholarship, cash prizes and medals in primary and secondary formal school system, Chelibeti Shikshya Sandan Programme for out of school girls are under implementation in the nonformal programme.

In the health sector in addition to doctors and nurses at higher and secondary level manpower, thousand of female community health volunteers at the local level (32089) have been trained and engaged at local level. Family planning, maternal and child health programme are under implementation to reduce maternal mortality and fertility rate 1993 New Era showed that the Maternal Mortality Rate has been decreased to 515/100,000 birth and that the percentage of women with knowledge of at least one family planning method has reached 92.7 percent in 1991. This is, a notable improvement since 1986 when the level of knowledge was reported to be 56 percent. Further, the findings of the Survey

shows that contraceptive prevalence rate among married, non-pregnant women is 24 percent in 1991. Though it is an eight fold increase in 15 years from 3 percent in 1986, it also indicates that there is wide gap between knowledge and use of family planning method.

The Ministry of Local Development implemented a programme of Production Credit for Rural Women (PCRW) in 1982 with the objective of increasing income of women through the process of education, training, group formation, creativity leadership development and enhancing decision making capacity of rural women especially, the women below poverty line. The programme has been implemented 328 village development committees of the 64 districts benefitting 20,052 families. Similarly Agriculture Development Bank, Nepal implemented Small Farmer Women Development Programme which provides credit to the women on group liability basis. These programmes have benefited women by enabling them to involve themselves in the income generating activities.

There are other programmes too implemented by the Ministries of Industry, Labour and Forestry.

Some institutional development has also taken place in favour of women in Nepal. Women Development Division in the Ministry of Local Development was the first one to be established, and was followed by Women Farmer and Development Division in the Ministry of Agriculture, and Women Development cells in the Ministry of Education, Culture and Social Welfare and Ministry of Water Resources. The Child and Women Development Section of the National Planning Commission Secretariat acts as the national focal point to bring intersectoral coordination in the women development programmes.

Several WID intervention policy and programmes in different sectors have been implemented so far during last two decades 1975-1994. However, these programmes have yet to be strengthened and expanded to show visible impact in improving of status of women in Nepal. There are inherent weaknesses in their policy and programme their its implementation. Some of them can be listed as the following:

- (a) The policies included for women in development in the plans are not supported by the programmes in the respective sectors to the required extent .
- (b) The programmes are designed to address only limited women population.
- (c) The projects are foreign aided and they lack future scope of sustainability once the foreign fund is withdrawn.
- (d) The projects like PCRW lacks cost effectiveness specially because of its high administrative cost.
- (e) The WID programmes are mostly training-based and are still very stereotyped and relate mostly with home management, family affairs and health and is not skill-oriented to increase their productivity.
- (f) Trainings are not supported by resource needed to translate them into real occupations

5. An assessment of critical factors for a successful WID intervention in the country

The review on the women's participation in development and the status of the Nepalese suggest the followed factors influencing WID in Nepal.

5.1 Macro factors

5.1.1 The slow economic growth of the country

During the our decades (1955-1995) the overall economic growth rate has not exceeded 3 percent per annum in an average. The Eight Plan (1992-97) notes that owing to the low growth rate in gross domestic product in comparison to the higher growth rate in population, the per capita income recorded only marginal increase during the period of 1964/65-1989/90. The per capita income is less than \$200 (in between \$150-\$180). As a result of low economic growth and widening economic and income disparities, the population below the poverty line has also increased. The National Planning Commission estimates that the population below poverty line comes to 49 percent of the total population. This has also adversely affected WID programmes.

5.1.2 The problem with mountain and hill topography

The development problems in Nepal is linked not only with paucity of resource in terms of natural, finance and human resource but also with the lack of road infrastructure. Women's mobility has been limited to household and the nearby fields. It is difficult for her contact market economy due to lack of mobility.

5.1.3 Patriarchal based socio-culture and legal system

Traditionally, the male members of the family enjoyed most of the right and responsibilities. In order to enhance participation of women there should be further improvements in the legislation with this objective.

5.2 Gender specific factor

5.2.1 Gap between policy and programme

The Plan of Action for Women's Development 1981 and the women in development policies of the plans have included sector specific policy in the women development but these policies have not been translated into strategy and programmes of the respective sectors such as agriculture, education and health to make visible contribution in enhancing the status of women.

The commitment made in the WID policy should be supported by the sectoral programme. In order to increase the literacy rate of women, gender specific target of literacy rate, supporting programme for increasing female enrollment both in formal and non formal education should be developed and implemented. It is encouraging to note that the Agriculture Perspective Plan- 1994 of HMG has incorporated gender specific objective and programmes in the training, livestock rearing and in other agriculture programmes.

5.2.2 Piecemeal approach of the programme

The sectoral programme relating to women development are based on piecemeal approach and serves very limited target group. These programmes have not been able to reach larger women population. The Production Credit for Rural Women (PCRW) though has been implemented in 64 districts (1982-1994) and is popular and relatively successful. But, it has not been integrated with district development plan. The project covers only limited wards of concerned district making a project a costly affairs. Similarly, the WID projects implemented by NGO/INGO are also scattered only on a few wards.

To translate the concept of women development in reality by use and these substantially involving women in the development process integrated master plan of action in WID should be formulated. This plan should be based on sectoral policy and programmes. The employment policy and institutional mechanism should be developed at national and district level for effective coordination, monitoring and evaluation in order to ensure effective implementation of the programme.

5.2.3 Women programme in population issues.

Female life expectancy, fertility rate, family planning acceptance rate and maternal mortality rate in Nepal have remained adverse. Therefore, the women should be made target group not only as receivers but also as the service providers in population programmes.

5.2.4 Gender specific data

Lack of gender specific data has made WID programme a difficult task. Therefore, a system should be developed to dis-aggregate data between male and female in the census and in other research studies.

6. A general description of the WID situation in the Banepa- Sindhuli road corridor

Table No. 8 indicates that in all the three districts the married couples of 10 years and above represents 62 to 64 percent of the respective district population. It shows that the education programme as well as the population programme seriously needs to consider this married age group population for the successful implementation of the overall development efforts.

The education status of the female in Sindhuli, Ramechhap and Kavrepalanchok districts are 26.90, 22.13 and 30.47 percent respectively. (Table No 9)

The statistics on female students who appeared in S.L.C. and passed indicate that the women with secondary education are also negligible. (Table NO. 10).

There is no districtwise data of health status as such indicating life expectancy, maternal mortality and crude death rate. But, it is only to be expected that the health status of the women in these districts is quite low even to match the national health status. There is one hospital in each district with population ratio of 14863, 12588 and 9023 for Sindhuli, Ramechhap and Kavrepalanchok

respectively. The health posts, sub-health posts and female community health volunteers are low in number (Table No.11) are also expected to be delivering low quality service, if at all.

7. Development Programmes in the Road Corridor

7.1 HMG/N development programmes

Annual development programme of 1994/95 in the proposed road corridor district is presented in Annex 1. On the basis of socio-cultural status of rural women, it can be clearly made out that male dominance will be evident in the general programme except in the women specific target activities such as maternal and child health programme and women education programmes. Besides, the programme-Production Credit for Rural Women under the Ministry of Local Development is only the women targeted programme with unit level offices in these district.

7.2 Some other programmes

The other agencies such as the banks and NGO together with INGO have implemented different integrated rural development programmes with consideration of gender issues as well. Examples are given below:

Agriculture Development Bank/N has launched WID programme as integral part of Small Farmer Development Programme (SFDP) as early as 1973. The programme has covered these proposed road corridor districts as well.

Accordingly the poor rural women are organized in the group and the credit and other support services will be provided on group basis for their socio-economic development. The women benefited by the SFDP-WID programme is attached in Annex 2. The activities included in the programme are animal husbandry, veterinary service, weaving of cotton cloth and woollen carpets, shop selling value added items, vegetable cultivation and selling production and group saving.

7.3 NGO/INGO programmes

NGOs/INGO's are implementing integrated rural development programme with gender issue as one of the priority area to improve the socio-economic status of women in order to make them active partner both in social activities and in income generating activities. These programmes covers certain number of village development committees. As for example Sindhuli Community Development Programme implemented since 1992 by the Action Aid Nepal aims to empower the community towards the self generating development and its focus groups are the poorest among the poor, women and backward communities. It has covered 15 VDC of the district and the programme activity areas are health, education, agriculture together with animal husbandry, water and infrastructure (roads and bridges) development. It works with local NGO Society for Participatory Cultural Education (SPACE) and Social Action for Grass Root Organization (SAGUN)

In Ramechhap district, Tamakose Sewa Sameti along with World Neighbour started Integrated Rural Development Programme in 1983 with an objective of strengthening capacity of marginalised communities and groups to meet their basic needs through participatory and sustainable development interventions.

Now the programme covers 25 Village Development Committees of southern Ramechhap district where more than 100,000 multi ethnic people live. The project has revolving fund, adult literacy, drinking water, agro-forestry, community forestry, family planning and NGO development as major areas of intervention activities.

In Kavrepalanchowk district, Family Planning Association/Nepal has implemented parasite control programme as an entry programme for family planning and rural development.

The above description of the status of women in the Banepa-Sindhuli Road Corridor presents that the socio-economic status of the women in the Banepa-Sindhuli corridor is not encouraging. The low literacy rate, low access to education, health, and property and high demand for household work rested their activities.

8. Possible strategies and programmes for a successful WID intervention in the proposed road corridor area.

8.1 Strategies and programmes

The programmes under implementation in three district of the proposed road corridor area indicate that (a) there is increasing trend of women's participation in all sorts of development activities, (b) women specific programme are coming up, (c) reservation or quota system is introduced to encourage women in training (d) special provision are made to enhance girls enrollment in primary education. It also indicated that the ground work for women's participation in the development of these district has started. However, more needs to be done in terms of policy, strategy and programmes for the success of WID concept.

These three district of the proposed road corridor areas are rural district with agriculture based economy and lack of road transportation is the major constraint in development of respective district. Despite the vital role played by women in household, economy, they are deprived of basic services like health, education, clean water, right to own land, access to credit and right to decide marriage etc.

The above situation suggests that the following approach, strategies and programmes can be possible areas in WID intervention.

8.1.1 Strategies

The gender and development approach propounded by the World Bank policy paper on WID area seems as possible model. It gives emphasis on gender relation in the family and community rather than women in isolation. Since family relation is the focus of all socio-economic activities and is the centre of all aspirations in rural Nepal, WID programme targeting women should not be isolated from the family of which they are essential and integral part. Based on these approach the strategies should be:

- (a) To improve the socio-economic status of women in the family by making them equal partner in the main stream of development in proposed road corridor area.

- (b) To make them self-reliant by providing access to formal and technical education, health and credit opportunities.
- (c) To provide employment opportunity in all the sectors of development by equipping women with appropriate technology and managerial skill to enable them to be service provider.
- (d) To create an environment to attract rural women to participate in the local level politics and development by being members of district and local development committees, users committees and employer and employees of development project.
- (e) To bring socio-cultural attitudinal change on gender issues in the family and community that both sex have equal share and responsibility in the social, cultural, household and economic activities through communication medias, employment opportunities and legal measures.

8.1.2 Programme

- (a) In line with the HMG/N policy to enhance the educational status of female, the programmes relating to establishment of girls school, appointment of female teachers, the time adjusted schools such as chelibeti and sikshya sadan should be expanded and strengthened.. Experience of Bangladesh, India, Pakistan and Chad shows that in a variety of cultures, girls enrollment and performance will improve if they attend single sex education than co-education.
- (b) The local level health institutions including district hospital, primary health centre, health post, sub-health post and female community health volunteers need to be equipped with manpower, medicine, equipments and physical facilities to enable them to provide the services on safe motherhood, immunization and family planning.
- (c) Considering women's secondary access to parental property as well as the poverty level of the rural people, collateral based credit policy of the banks needs to be changed to non-collateral based credit specially for women if she is technically capable. The Production Credit for Rural Women and WID programme of Small Farmer Development Programme provide credit to women on group basis and has benefited women group from credit opportunities. Beside credit to capable individual women must also be made available in the proposed road corridor districts.
- (d) Creation of employment opportunities is the concern for both men and women in these districts. Therefore, all sectoral development project and specially this proposed Banepa-Sindhuli road project needs to make out how much employment will be generated during project period and after completion of the project. During the construction phase more job will be available as basic labourers because of their low education status. However, the project should organize suitable middle level technical and administrative training to provide middle level employment opportunities. Regarding generation of female employment, considering their heavy work at home and field, emphasis should be given on increasing the efficiency and economic productivity of women's work.

- (e) After completion of the project, there is possibility of development in land and housing construction business, tourism and industrial development as the economic outcome of the road. However, the project also needs to think about activities related to road corridor such as green belt creation, openings of tea shops and restaurants, construction of water and toilet facilities and provision of toll system as post completion road maintenance and resource mobilization activities. More women can be given employment in these areas as extension worker/self-employed entrepreneurs. Suitable training and credit facilities should be managed for the purpose.
- (f) Involvement of women in the local politics and development committees will facilitate to increase women's involvement in development activities. So priority should be given to employ more women in the proposed road corridor project site and in the user's committees to be formed for the supervision and maintenance of the constructed road. Measures should be taken for policy direction, training to the local women and raising social acceptance in these areas.
- (g) Media programmes has to be developed to sensitize about sharing responsibilities between male and female members of the family at home and outside. For instantly if the female member is busy with the kitchen work, the male member can help her by water fetching, fodder collection and taking care of livestock. This kind of shared responsibilities will allow her to join income generating activities and thereby become productive labour.
- (h) Considering women development as an issue of household and outside world as a whole and their work burden of nearly eleven hours a day, women will have little or no time to participate in the training, income generating and extension programmes unless their efficiency and productivity is increased by reducing their work burden through the introduction of appropriate technology. The studies made in this area have suggested that improved technology needs for grain and oil processing, stoves and cooking utensils, looms, water system, food storage and drying, composting, seed selection, and fodder collection. This will help not only to save their work burden and time but will also allow them to work in the employment created by these technology and in other income generating activity. The proposed project should consider to introduce suitable new technology for easing household burden of women in order to increase their productivity.
- (i) Women in development is the concept of development system as a whole and so should be considered as an integral part of proposed project. Nevertheless, women should be specifically targetted in all the activities of the proposed project i.e. in training, construction, credit, administrative activities and other related areas. WID activities of the project also should be planned, supervised and monitored as a part of project activity to indicate its impact in enhancing the status of women in the respective districts of Sindhuli, Ramechhap and Kavrepalanchok.

Areas of intervention for WID programmes mentioned in this chapter covers more or less inter-related activities that should be attacked to bring women in the main- stream of development. Special attention should be given to coordinate sectors related with WID activities with in respective agencies.

9. Some specific activities

WID programme interventions mentioned in this chapter covers inter-related sectoral activities in general that should be included to bring women in the main stream of development. Since these programme do not belong to road project activities the project corridor area specific package WID programme needs to be developed with an objective to bring positive impact of road development on women's status by creating project environment for generating economic utilization of the road. The package programme can be envisaged as following:

- (a) Survey the corridor area to select project area and the target women population
- (b) Non-formal education as a entry point for skill training and income generating activities.
- (c) Trainers training programmes for high school pass girls for making them women leaders and change agent.
- (d) Income generating programmes in the areas of nursery trees and flowers, livestock, vegetable cultivation and agro-based cottage industry, retail business like tea shops, grocery and other shops.
- (e) Targetted credit schemes based on group approach.
- (f) Establishment of linkage mechanism to co-ordinate with sectoral agencies for sector specific programme and with local NGO's for their active support and involvement.
- (g) Adopt participatory and group based approach to involve women at all levels of project activities.

Table

Table 1: Classification of economically active and inactive population, 1991

Population Classification	Male	Female	Total
1. Total Population (in '000)	9221	9270	18491
2. Population (10 Years and Above in '000)	6419	6557	12976
3. Economically active population force as % of Total Population	69.6	70.7	70.2
4. Economically Active Population (10 Years and Above in '000)	4376	2964	7340
5. Economically Active Population Participation Rate (4 as percentage of 2)	68.2	45.2	56.6

Source: HMG, Central Bureau of Statistics (CBS), Population Census - 1991 Vol 1 Part XIII, Table 50 1993 HMG/N Nepal, Kathmandu

Table 2: Economically active population (10 year and above by major industry and sex, 1991 (in percent)

Industry	Male	Female	Total
Agriculture	74.9	90.5	81.2
Mining and Quarrying	0.1	-	-
Manufacturing	2.6	1.2	2.0
Electricity, Gas and Water	0.3	-	0.2
Construction	0.7	0.1	0.5
Commerce	4.5	2.0	3.5
Transport and Communication	1.1	0.1	0.7
Finance and Business Services	0.4	0.1	0.3
Personal and Community Services	13.6	5.3	10.2
Others	0.6	0.1	0.4
Industry Not Stated	1.2	1.6	1.0
Total	100.0	100.0	100.0

Source HMG, CBS, Population Census- 1991 Vol, I Part XIII, Table 51, 1993. Kathmandu, Nepal.

Table 3: Age-specific economic activity rates by Sex, Nepal Census-1991

Age Group	Both Sexes	Male	Female
10-14	22.85	18.44	28.54
15-19	49.09	49.57	49.29
20-24	65.99	80.52	54.31
25-29	72.00	92.77	54.13
30-34	73.60	95.61	54.03
35-39	75.32	96.33	54.73
40-44	74.25	95.93	54.30
45-49	73.84	95.12	52.31
50-54	70.43	92.07	48.17
55-59	66.56	88.56	41.69
60-64	45.74	66.47	25.50
64+	26.74	40.27	12.92
Total	56.57	68.71	45.53

Source: HMG, CBS, The Analysis of the 1991 Population Census Vol I Part XIII, Table 50, 1993 Kathmandu, Nepal.

Table 4: Literacy situation by sex

Year	Male	Female	National
1971	23.6	3.9	13.9
1981	34.0	12.0	24.0
1991	54.0	25.0	40.0

Source: HMG, National Planning Commission, Central Bureau of Statistics, 1991. Kathmandu.

Table 5: Girls' percentage over total enrolled (1975-1991)

Level/Year	1975	1980	1985	1991
Primary	20.0	26.9	30.0	37.0
L. Secondary	17.6	20.3	25.0	31.0
Secondary	16.9	18.9	23.0	29.0

Source: HMG, Ministry of Education, Culture, and Social Welfare, Manpower and Statistics Section, Kathmandu.

Table 6: Health and demographic status

Health Demographic Status	1971 ¹	1981 ²	1991 ³
Life Expectancy for Men	42.1	47.5	55.38
Life Expectancy for Women	40.0	44.5	52.60
Crude Birth Rate (in 1000)	45.7	42.0	41.00
Crude Death Rate (in 1000)	20.8	16.0	16.00
Annual Population Growth Rate	2.7	2.7	2.1
Infant Mortality Rate	-	-	102
Total Fertility Rate	6.8	6.4	5.6
	6.3	6.3	
Maternal Mortality Rate per 100,000	1976	-	850
Contraceptive Knowledge on at least one method	-	51.9	92.7*
Contraceptive Prevalence Rate (Use any modern method)	3%(1976)	7.6	24%*

Source:- For 1 2- * Nepal Fertility, Family Planning and Health Survey 1991- New ERA and For 3.

Table 7 Women development programme in HMG budget

Sectors	Fiscal Years (Rs in Thousand)		Remarks
	1993/94	1994/95	
<u>Education</u>			
(a) Women Education	18639	19570	
<u>Health</u>			
(a) Female Community Health Volunteers	39481	25839	
(b) Nursing Development	6299	1100	Under Traditional Birth Attendance (TBA) Programme in 1994/95 F. Year
<u>Local Development</u>			
(a) Women Development Programme	83231	88299	
<u>Agriculture</u>			
(a) Women Development Programme	391	1453	
(b) Production Credit for Rural Women in Small farmer Development Programme	6850	10000	
<u>Industry and Mine</u>			
(a) Women Cottage Industry Programme	4126	-	
<u>Labour</u>			
(a) Women Labour Skill Development and Training Programme	2201	2361	Under Regular Budget Heading)
<u>Tourism</u>			
(a) Women Tourism Industrialist Programme	2350	1763	
Grand Total	163568	150385	

Source:- Description of Income and Expenditure of FY 1993/94 and 1994/95
Ministry of Finance HMG/N, Kathmandu.

Table 8: Marital status

S.No.			Sindhuli	Ramechhap	Kavre
1	Female Population by Marital status (Age 10 yrs and over)	Single	23575 (30.2%)	20118 (28.8%)	33045 (28.1%)
		Married	38681 (62.3%)	44102 (63.1%)	75242 (64.0%)
		Widow	4899 (6.3%)	4863 (7.0%)	7624 (6.5%)
		Divorced	211 (0.3%)	126 (0.2%)	190 (0.2%)
		Separated	277 (0.4%)	267 (0.4%)	547 (0.5%)
		Not Stated	484 (0.6%)	414 (0.6%)	844 (0.7%)

Source: Women in Nepal Some Statistical Facts, CBS/HMG, Kathmandu. 1993

Table 9 Population 6yrs of Age and Over by Literacy Status, Sex and Age for Sindhuli, Ramechhap and Kavrepalanchok

S. District No	Total Population 6 yrs of age and Over	Literate			Illiterate			Not Stated		
		Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
1. Sindhuli	182449	59463 (100.00)	43468 (73.10)	15995 (26.90)	120441 (100.00)	46010 (38.20)	74431 (61.80)	2545 (100.00)	1059 (41.61)	1486 (58.39)
2. Ramechhap	154192	46121 (100.00)	35916 (77.87)	10205 (22.13)	105571 (100.00)	36905 (34.96)	68666 (65.04)	2500 (100.00)	819 (32.76)	1681 (67.24)
3. Kavrepalanchok	266210	104445 (100.00)	72625 (69.53)	31820 (30.47)	159240 (100.00)	56588 (35.54)	102652 (64.46)	2525 (100.00)	1008 (39.92)	1517 (60.08)
4. Central Development Region	5102573	1949714 (100.00)	1338572 (68.65)	611142 (31.35)	3105721 (100.00)	1236327 (35.81)	1869394 (60.19)	47138 (100.00)	20178 (42.81)	26960 (57.19)

Source: Population Census 1991- Vol 1 Part X CBS, /HMG Nepal

Note: The figure in parenthesis represents percentage

Table 10: Education status

S No.	Population	Level of Education	Sindhuli	Ramechhap	Kavre
1	Female Total Population		22946	188814	324819
2	Female Literates		15995	10205	31820
3	Female Student Enrolement	Primary	1287	8862	24201
		Lower Secondary	800	484	1905
		Secondary	798	357	1673
		Total	14469	9703	27799
4	Female Teachers	Total			
		Female Teacher Trained	39	48	229
		Female Teacher Appeared (Number)	22	15	79
6	Female S.L.C. Students (1990/91)	Passed (Number)	242	57	452
			78	13	80

Source Women in Nepal Some Statistical Facts, CBS/MHG, Kathmandu. 1993

Table 11: Health status

Health Institution	Sindhuli	Ramechhap	Kavre
Hospital	1	1	1
Hospital Bed Number	15	15	36
Bed/ Population	14863	2588	9023
Health Posts	12	12	10
Sub-health Posts	17	17	20
Primary Health Centre	-	-	1
Health Centres	-	-	1
Female Community Health Volunteers	495	495	837

Source List of Health Institutions by District - 1993/94 - Dept. of Health Service, Ministry of Health/Nepal. 1994

Annex 1

District Programme
KAVREPALANCHOK DISTRICT
(Fiscal Year 1994/95)

(Rs. in Thousand)

S.N.	Ministry/Sector	Programmes	Budget
1	Agriculture	Agricultural Information Programme	5462
			5462
2	Forest and Land Preservation	Land and Watershed Conservation Office	1703
		Sindhuli-Kavre Forest Development	8096.5
		Hill Kanbuliyat Forest and Grazing Development Programme	1070
			10869.5
3	Roads and Bridges	Roshi-Khola Suspension Bridge Construction	300
		Mangaltar -II Suspension Bridge-Construction	80
			380
4	Industry	Cottage Industry Office	1090
			1090
5	Education, Culture and Social Welfare	Basic and Primary Education Project	561
		Women Education	302
		Scholarship	24
		Panauti Integrated Project	20925
			58327.2
6	Health	Expanded Programme for Immunization (EPI)	448
		FP/MCH Programme	1732
		Malaria and Visceral Leshmanizsis Control	562.7
		Tuberculosis Control	24.3
		CDD(Diarahoeal Disease Control)	5
		Leprosy Control	107.9
		Nutrition Programme	11
		FCHV	301
			3191.9
7	Drinking Water and Sanitation	District Drinking water Office	9438
		Dapcha Drinking Water Project	200
		Bhawarkot Drinking Water Project	1854
		Mangalatar Drinking Water Project	1500
		Kyshadevi Drinking Water Project	1076
		Kanpur Drinking Water Project	240
		Methinkot Drinking Water Project	590
		Birta Deurali Drinking Water Project	135
		Mechhe Drinking Water Project	481
		Mahankal Drinking Water Project	100
		Madan Kudari Drinking Water Project	100

S.N.	Ministry/Sector	Programmes	Budget
		Palanchok Bhagawati Kharelathok Drinking Water Project	100
		Aneyakot Drinking Water Project	50
		Panchkal Drinking Water Project	50
		Completed Drinking Water Repairing and Maintenance	50
		Survey	50
		Sanitation	50
		Dhulikhel Drinking Water Project	300
		Consumers Committee Estimation	
		District Drinking Water Office	2512
		<u>Rural Drinking Water Project</u>	<u>4197</u>
		Karthalibeshi Rural Drinking Water Project	50
		Chalal Ganesh Rural Drinking Water Project	748
		Naladum Rural Drinking Water Project	477
		Thuloparsel Rural Drinking Water Project	590
		Sarshyunkharka Rural Drinking Water Project	420
		Sankhu Patichaur Rural Drinking Water Project	480
		Ssource Conservation Project	680
		Completed Project Repair/Maintenance	215
		Sanitation Programme	199
		Preliminary Survey	16
		Training Programme	252
		District Profile Preparation	150
			13635
8	Local Development	Women Development Project	1512
		Adibasi Programme	236
			1748
		Total	58164.4

SINDHULI DISTRICT
(Fiscal Year 1994/95)

(Rs. in Thousand)

S.N.	Ministry/Sector	Programmes	Budget
1	Agriculture	Agricultural Information Programme	6720
			6720
2	Forest and Land Preservation	Community Forest Development Project National and Kabuliyati Forest Development Project	1770.5
			1647
			3417.5
3	Industry	Cottage Industry Development Committee	726
			726
4	Road and Transport	Lampantar Suspension Bridge	250
			250
5	Education, Culture and Social Welfare	Basic and Primary Education Project Women Education	896
			302
			1198
6	Health	(EPI) (vaccination)	535
		FP/MCH	1618
		CDD	8
		FCHV	257
		ARI	36
		Nutrition	14
		Malaria & Visceral Leshniqniasis Control	915.1
		Leprocy Control	78.8
		Population and Family Health Projects	900
		Tuberculosis Control	24.9
		4386.8	
7	Drinking Water and Sanitation	<u>Continued Programmes</u>	6437
		Ratamata Drinking Water Project	200
		Purano Jhagajholi Drinking Water Project	150
		Dakaha Sirthauli Drinking Water Project	250
		Siddheswori Gardoli Drinking Water Project	900
		Ghante Pipalmadi Drinking Water Project	200
		Dhiman Dumaria Drinking Water Project	50
		Kirante Drinking Water Project	100
		Hatpate Drinking Water Project	250
		Belghari	400
Ratamata -Nakali Drinking Water Project	400		

S.N.	Ministry/Sector	Programmes	Budget
		Belghari Chharchhare Drinking Water Project	200
		Kattika Ramata Drinking Water Project	200
		Mahendra Jhyadi Drinking Water Project	200
		Tandi Drinking Water Project	150
		Kholagaun Drinking Water Project	200
		Arunthakur Drinking Water Project	300
		Kakurthakur Drinking Water Project	100
		Sindhulimadi Drinking Water Project	400
		Dudbhanjyang	100
		Completed Project Repair /Maintenance	50
		Survey	50
		Training	50
		Toilets Construction Donation	50
		District Drinking Water Office	1487
		<u>Rural Drinking Water Project</u>	<u>4201</u>
		Harshahi Rural Drinking Water Project	1278
		Toshramkhola Rural Drinking Water Project	725
		Chainpur Dadagaun Rural Drinking Water Project	540
		Baseri Rural Drinking Water Project	460
		Source Preservation Project	630
		Completed Project Repair Maintenance	175
		Sanitation Programme	107
		Preliminary Survey	16
		District Profile Preparing	150
		Training	120
			10638
7	Local Development	Women Development Project	362
			362
		Total	27968.3

RAMECHHAP DRISTICT
(Fiscal Year 1994/95)

(Rs. in Thousand)

S.N.	Ministry/Sector	Programmes	Budget
1	Agriculture	Agricultural Information Programme	4497
			4497
2	Forest and Land Preservation	Forest Sector Programme Loan	2013
		Dolhak-Ramechhap Forest Development Project	4931
		Hill Kabuliyat and Grazing Developmet Project	725
			7669
3	Road and Bridge	Rasnalu Suspension Bridge Construction	120
		Siktaghat Suspension Bridge Construction	1800
		Those Suspension Bridge Construction	675
		Karambot Suspension Bridge Construction	320
		Puchghat Suspension Bridge Construction	240
			3155
4	Industry	Cottege Industry Development Board	653
			653
5	Electricity & Energy	Khimti Hydroelectric Kirne Ramechhap-Manthali road	10000
			10000
6	Education, Culture and Social Welfare	Basic and Primary Education Project	647
		Women Education	254
			901
7	Health	EPI (Vaccination Programme)	478
		FP/MCH Programme	1360
		CDD (Diarohoea Control)	7
		Female Health voluntree	257
		ARI (Acute Resperatory Inf.)	36
		Nutrition	17
		Maleria and Visceral Lesmianiasis	287.5
		Tuberculosis Control	29.1
		Leprosy Control	85.8
	2557.4		
6	Drinking Water and Sanitation	<u>Continued Programmes</u>	8035
		Bulung Bulung Drinking Water Project	200
		GothagaunDrinking Water Project	1931

S.N.	Ministry/Sector	Programmes	Budget
		Priti Drinking Water Project	900
		Lakahnpur Drinking Water Project	350
		Manthali Drinking Water Project	1800
		Chisapam Drinking Water Project	415
		Gagal Bhadaure Drinking Water Project	260
		Chuchure -2 Drinking Water Project	100
		Pekarnas Drinking Water Project	100
		Thakle Drinking Water Project	50
		Durumba Drinking Water Project	100
		Completed Project Maintenance	50
		Survey	50
		Training	50
		District Drinking Water Office	1579
		<u>Rural Drinking Water Project</u>	<u>3331</u>
		Goganebethan Rural Drinking Water Project	600
		Gelu Rural Drinking Water Project	435
		Galishan Rural Drinking Water Project	530
		Kathajor Rural Drinking Water Project	530
		Gelu Rural Drinking Water Project (maintenance)	210
		Source Preservation Project	660
		Completed Project Maintenance	110
		Sanitation Programme	107
		Training	133
		Preliminary Survey	16
			<u>11366</u>
7	Local Development	Women Development Project	382
		Local Roof-Suspension Bridge Programme	500
			<u>882</u>
		Total	41680.4

Annex 2

Investment of Small Farmers Development Divison of Agricultural Development Bank

Fiscal Year 2048/49

Particulars	Districts		
	Sindhuli	Ramechhap	Kavre
Investment (Rs. in '000)	1912	1668	5679
Collection (Rs. in '000)	1382	876	5207
Outstanding (Rs. in '000)	5674	5795	18457
Deliquency (Rs. in '000)	2506	1895	9639
Group:			
Male	152	147	366
Female	15	30	41
Total	167	177	407
Member:			
Male	1048	940	2853
Female	98	355	413
Total	1146	1295	3266
Saving (Rs. in '000)	310	76	844

Source : ADB/N

Fiscal Year 2049/50

Particulars	Districts		
	Sindhuli	Ramechhap	Kavre
Investment (Rs. in '000)	2972	2253	8421
Collection (Rs. in '000)	1906	1239	5539
Outstanding (Rs. in '000)	6797	6803	21802
Deliquency (Rs. in '000)	2743	2592	9895
Group:			
Male	190	166	382
Female	30	20	48
Total	220	186	430
Member:			
Male	1431	1127	2879
Female	264	127	436
Total	1695	1254	3315
Saving (Rs. in '000)	248	237	961

Source : ADB/N

Fiscal Year 2050/51

Particulars	Districts		
	Sindhuli	Ramechhap	Kavre
Investment (Rs. in '000)	4300	1184	11662
Collection (Rs. in '000)	2303	891	7858
Outstanding (Rs. in '000)	8790	4990	26233
Delinquency (Rs. in '000)	2615	2512	9631
Group:			
Male	181	131	410
Female	27	17	60
Total	208	148	470
Member:			
Male	1203	799	3175
Female	165	244	517
Total	1368	1043	3692
Saving (Rs. in '000)	327	93	1128
VDC Covered	6	4	21
Repayment Rate (%)	43	29	37

Source : ADB/N

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ENVIRONMENT AND FOREST CONSERVATION
IN NEPAL WITH SPECIAL REFERENCE
TO THE AREA SURROUNDING
THE PROPOSED BANEPA-SINDHULI ROAD CORRIDOR

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February 1995

CONTENTS

	Page
A. A general profile of the environment and forest situation in Nepal and discussion of different aspects of the problem for their sustainable management.	1
B. An overview of the factors involved in the dynamics of environment and forest situation in Nepal.	3
C. A historical perspective on different environment and forest conservation interventions in the country and a brief assessment of their performance.	4
D. An assessment of critical factors for a successful environment and forest conservation intervention in the country.	7
E. A general description of the environment and forest conservation situation in the proposed Banepa-Sindhuli road corridor.	9
Boundary of the Proposed Banepa-Sindhuli Road Corridor.	9
List of Information Required.	13
F. Possible strategies and programmes for a successful environment and forest conservation intervention in the proposed road corridor area.	14
The Intervention for an Ideal Project.	15
Strategy for Effective Conservation Measures.	16
Traditional and Indigenous Community Resource Management System.	17
Programmes/Activities for Implementation	18
1. Technical Measures	18
1.1. Land Productivity Conservation	18
1.2. Forest Management	18

1.3. Prioritization of Sub-Watersheds	20
1.4. Identification of users' groups	20
1.5. Infrastructure Development, Maintenance and their Protection	20
1.6. Community Soil Conservation and Environmental Awareness Programme	20
1.7. Natural Systems Monitoring	21
2. Socio-Economic Matters	21
3. Community Health, Sanitation and Drinking Water	21
4. On-farm and Off-farm Income Generation Activities	21
5. Monitoring & Evaluation and the Environmental Impact Assessment(EIA)	21
6. Organization and Implementation	21
7. Factors Ensuring Sustainability	22
REFERENCE	23

Map 1. Map Showing Watershed Condition

Map 2. Proposed Sindhuli-Banepa Effective Road Corridor
(ERC) with Sub-Watersheds for mapping.

Map 3. Map showing alternate routes of the proposed
road.

N.B. Attached a coloured original Land Use Map (Scale
1:125,000) delineating the above features.

IN-DEPTH STUDY OF
ENVIRONMENT AND FOREST CONSERVATION IN NEPAL
WITH SPECIAL REFERENCE TO THE AREA SURROUNDING THE PROPOSED
BANEPA-SINDHULI ROAD CORRIDOR.

- A. A general profile of the environment and forest situation in Nepal and discussion of different aspects of the problem for their sustainable management.

Nepal, a mountainous country, the topography of which is broken into hills and valleys and separated by numerous rivers running from north to south. About two-thirds of the country is occupied by hills and mountains with steep to very steep slopes. The lowland Terai is formed of rich alluvial sediments while the Siwaliks, forming a transition belt between the Terai and the Mountains, is mostly erodible. These physiographic zones are characterised by their physical land forms including the types of soils, altitude and geology. Most of the annual rainfall (about 80 percent) occurs during the monsoon (June to September). Thus, its environmental problems are emerged through unscientific extraction and utilization of natural resources (forests), which are accelerated by the monsoonic climate on its fragile geology. In addition, the haphazard construction of roads and trails without proper knowledge of geology and slope of the terrain also inviting erosion problems.

According to the broad land-use category of Nepal, 42 percent is forest land (37% forested lands with at least ten percent crown cover and plantations, and 5% shrub-lands with degraded forest lands), 28 percent agricultural land (including 7% non-cultivated inclusions), 12 percent grass land and 18 percent other lands.^{2/}

The forests in Nepal are not well distributed in relation to population density. The per capita forest in the Hills and the Terai is only 0.26 and 0.11 ha respectively, as compared to the national average of about 0.37 ha.^{4/} There has been extensive forest depletion in the country. The total forest area is estimated to have declined from 6.7 million ha in 1964 to 5.5 million ha in 1985, i.e., a depletion of 0.8 percent/yr. The recent study by the Forest Research and Survey Centre has estimated the annual deforestation rate of 1.3 % in the Terai districts (1993).^{3/} Forests in the Hills and Mountains are mostly in degraded condition, except in inaccessible areas and at religious places.

Nepal is rich in biological diversity which are still intact in national parks, reserves and protected areas covering 12 percent of the total land mass of the country. Two of the national parks of Nepal (Royal Chitwan National Park and

Sagarmatha N.Park) have been listed in UNESCO's World Heritage Sites. The network of parks and protected areas represent almost all the ecological zones.

The per capita availability of agricultural land is much less in the mountains and hills as compared to the plain(Terai). On an average, there are 5.7 persons per net cultivated area(ha). Paddy, maize and wheat are the major crops accounting for 74 percent of the total cropped area and almost 96 percent of the total cereal grain production.^{4/} The increase in crop yield during the Seventh Plan has been noticed not because of growth of productivity but largely due to expansion of land area, which may be a result of deforestation and encroachment of marginal lands that were left uncultivated.^{1/} An estimate based on Sindhupalchoak district suggests that a farmer with 1 ha of cultivated land requires an access to about 1.3 ha of forest to obtain fodder and bedding materials.^{5/}

Livestock is an indispensable part of subsistence farming in the country. Roughly 75 percent of the cultivated land is ploughed by draught animals and fertilized with compost. In 1992, the population of cattle, buffaloes, goats and sheep together were 16.6 million.^{6/} About 42 percent of the fodder requirement or total digestible nutrients (TDN) is obtained from the accessible forests, shrub lands and grass lands. There is already a shortage of fodder in the Terai and Mid-Hills. Since 20 percent of the Cattle population in Nepal are already unproductive, any further increase in livestock would contribute to accelerate forest degradation and soil erosion.^{4/} Under the heavy pressure of livestock, almost all the grazing lands especially in the Mid-Hills, are overgrazed. The soil loss from overgrazed grass land is estimated to be 34.7 mt/ha/yr, whereas it is around 9.4 mt/ha/yr in the managed pasture.^{7/}

Seventyfive percent of the people still depend on fuelwood to meet their energy requirements. The per capita fuelwood consumption in the Hills is about 708 kg whereas it is 689 kg in the Terai. The annual per capita timber consumption was about 0.07 m³ in 1986 and is estimated to reach 0.1 m³ per capita per annum by the year 2000 AD.^{2/} But the requirement of timber would be much more if the present rate of urbanization continues.

Soil depth gets thinner as one goes from south to north, and the Terai has rich alluvial sediments. The Siwaliks and the Mid-Hills are more susceptible to erosion. The former has erodible soil and the latter is rich in sandy loam with different productivity. There are lots of degraded areas in the watersheds. Soil loss ranges from 5-200 mt/ha/yr, depending upon the land use and land forms.^{4/}

Based on the classification of watershed condition (1978), one-third of the country's districts are considered to have marginal to very poor average watershed condition (Map 1). However, there is a need to update the information.

B. An overview of the factors involved in the dynamics of environment and forest situation in Nepal;

Nepal's steep topography, broken terrain and fragile geology along with the prevailing monsoonic climate are all vulnerable for environmental degradation. The environmental problems of this country is still associated with "Poverty", unbalanced population growth and unplanned development activities. It is estimated that about 49 percent of the total population are living below the absolute poverty line.¹ Agriculture is practised mostly on terraces and on valleys and river fans. The production on terraced lands is mainly based on rainfed condition and is progressively on declining trend as a result of soil erosion due to over-exploitation of land and forest resources. This has made the country difficult to maintain the environmentally sustainable agricultural productivity from the limited land resources.

Deforestation in Nepal is primarily due to the over-extraction of fuelwood, fodder and timber, overgrazing and frequent fires, encroachment for agricultural expansion and even illicit smuggling of woods. All accessible forests are over-used. Consequently, forests have been depleted and many species of wild plants and animals have been threatened by destruction of their habitat outside the protected areas. Many forested areas of the past are now under scrub vegetation, and there is an urgent need of their management.

Although tourism is becoming the second biggest foreign currency earning activity, trekking and mountaineering activities are also compounding the ecological damage through the reckless use of natural resources, especially the firewood. Degradation of flora and fauna and in totality the environment, has reached a critical level at several places.

There is a strong interrelationship between agriculture, livestock and forests in the rural life. Under the heavy pressure of livestock almost all the community grazing lands are overgrazed. This has forced the people to take their cattle further inside the forests, enhancing deforestation.

Hence, increase in population, uncontrolled use of natural resources, unscientific agricultural activities on fragile mountain slopes and lack of environmental consideration are all leading to environmental problems and degradation of the quality of life (fig 1)

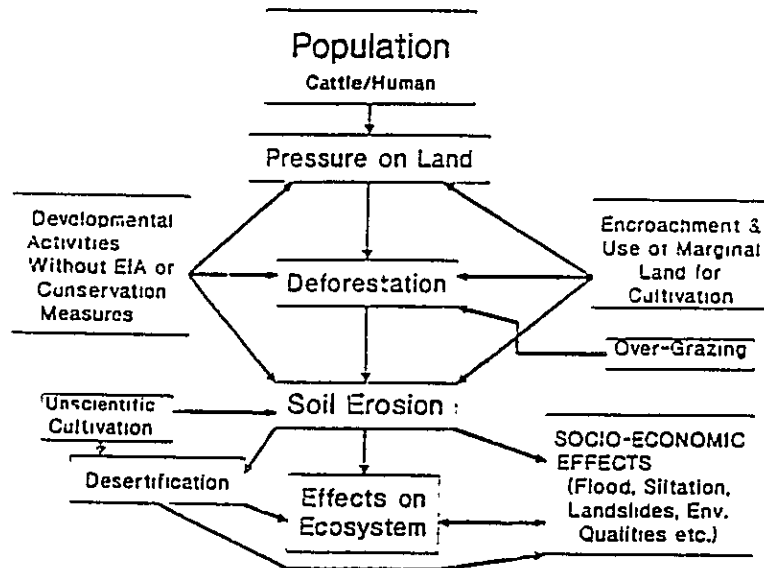


Fig 1. Flow chart showing major environmental problems

- C. A historical perspective on different environment and forest conservation interventions in the country and a brief assessment of their performance.

The consideration of environment in economical development is a growing concern of many countries. The over-exploitation of natural resources in the past have left several ecological problems which are becoming serious at present. The conservation and sustainable management of natural resources is now regarded as an essential component to make the development sustainable. In our rural economy where people have to think of their next meal, environment for them becomes a luxury. But, environmental consideration is very essential for the achievement of sustainable development in order to alleviate poverty. The rural economy is a complex system. There is a strong interrelationship between agriculture livestock and forests in the rural life. More than 30 percent of the Nepalese people still live in rural areas and their economy is still dependent on the use of natural resources.

Realizing the importance of environmental protection for sustainable economic development, Nepal first initiated policies and institutional arrangement in this line since the Fourth Plan (1970-'75). The need for wildlife conservation was however,

realized during the Second Plan (1962-65). The preparation of management plans for selected districts, afforestation, forest demarcation, construction of firelines and forest roads, and the promotion of forest-based industries were some of the steps the Second Plan had initiated. The Third Plan (1965-70) drew attention to the prevalence of deforestation and the need for soil conservation. The Fourth Plan (1970-75) thus, emphasized on the protection of biological diversity through the establishment of national parks and wildlife reserves, and soil conservation by establishing the Department of Soil Conservation. The Plan also initiated sectoral policies on agriculture and tourism with due consideration on environmental protection. The Fifth Plan (1975-80) introduced land use and water resources development policy, soil and water management programmes and recommended plantation and management of forestry resources. It was during this Plan period that the National Forest Policy (1976) was enacted. The policy components were to manage forests to control floods, landslides, soil erosion and to maintain ecological balance, and also to achieve sustained economic and social benefits from forest resources by making the country self-sufficient in timber and fuel and to conserve the natural environment. The Sixth Plan (1980-85) initiated environmental impact assessment (EIA) and incorporated environmental issues with emphasis on population control. The Seventh Plan (1985-90) proposed the inclusion of more environmental programmes, made EIA mandatory for all major development activities. The Plan also included the environment as a national development sector, aiming at maintaining a harmonious relationship between the development and the environment, reducing water, air and noise pollution and developing a sound environmental management system in order to enhance the welfare of the people. Emphasis was also given to encourage people's participation and the creation of public awareness. During this Plan period, the National Conservation Strategy and the Forestry Sector Master Plan were also approved by the government.

The Forestry Sector Master Plan (MPFS), a 25 year plan, was approved and implemented in 1988 with emphasis on programme approach and consisting of community and private forestry, national and leasehold forestry, soil conservation and watershed management, and conservation of ecosystem and genetic resources, and medicinal and aromatic plant development as the six primary development programmes. Similarly the National Conservation Strategy for Nepal (1988) also proposed a conservation action agenda. The main goal of both of these documents were to protect, preserve, restore and manage the renewable resources and to meet the basic needs of the people.

The Eighth Plan (1992-97), tried to focus on environmental management through policy formulation, preparation of EIA guidelines and other studies related to the preservation of the environment and control of pollution (air, water). Attempts were also made on institutional setting, but still lack on effective institution that can supervise and monitor environmental aspects at the implementation level.

To give more emphasis on the environment, the Constitution of Nepal 1990 had included environmental protection under the Directive Principles and Policies of the State. Based on the Constitutional provision, a Committee on Natural Resources and Environmental Protection was constituted in the House of Representatives (Lower House).

The existing environmental laws related to land use included land reform, preservation of mountain environment and protection of designated areas in representative eco-physiographic zones for the protection of bio-diversity. The policy of zoning protected areas, with surrounding buffer zone as an access to local population for their basic needs (mostly firewood and fodder), is being implemented in five National Parks and Reserves in the Terai.

Similarly, forest related Acts include provisions to prohibit deforestation, encroachment, grazing by domesticated cattle and illegal removal of products from government forest land; management of community forest; and management of wildlife and their habitat in national parks, wildlife reserves and other protected areas. Likewise, there are acts that prohibit the use of explosives for catching and killing aquatic life; that consider environmental aspects during quarrying and mineral extraction; and that for the preservation of cultural heritage. However, these Acts need to be reviewed and amended as necessary to align them with environment and development concept. The necessity of a separate Environment Act was perceived and a draft is already made.

Attempts were also made to institutionalize EIA for all major development activities. Recently a national EIA guideline was prepared and some specific ones are in preparation stage. Attempts are still on to minimize the use of fuelwood through encouraging alternate energy sources. Attempts are also being made on harnessing the country's immense hydro-energy resource.

There are numerous governmental institutions established since 1960s. In 1974, government established the Department of Soil and Water Conservation and equipped it with multidisciplinary expertise to address soil and water conservation issues. In 1990, the department was renamed as the Department of Soil Conservation and Watershed Management to give more emphasis on conservation measures on watershed basis. In 1993, the department was renamed as the Department of Soil Conservation, and is equipped with two major divisions: Planning, Monitoring & Evaluation Division and Management Division. The earlier project offices were also made permanent as District Soil Conservation Offices (DSCO) and some specific projects were still maintained as central and district level projects. The above changes did not produce any impact on conservation measures, but the change from project status to permanent offices (DSCOs) certainly emphasised the need of the department's activities by the government. In 1980 the National Commission for the Conservation of Natural Resources (NCCNR) was established with an advisory role to HMG on matters related to natural resources conservation. In September 1991, the Ministry of Forests and

Soil Conservation was renamed as Ministry of Forests and Environment with a view to implementing and coordinating environmental activities, besides forestry. However, this ministry was again renamed in 1992 as the Ministry of Forests and Soil Conservation and all activities related to the environment was taken away by a Council for the Conservation of Natural and Cultural Resources (CCNCR) formed under the National Planning Commission (NPC). But unfortunately, the council could limit its activities only on study and making guidelines.

In recent years, several non-governmental organizations came up with several objectives including the creation of public awareness on environment. There are some NGOs active in conservation awareness programmes in different parts of the country. They have been quite effective in articulating the cause of environmental issues. The Nepal Environment Journalist Forum is running environment awareness programme (Ankhe Jhyal) in Nepal Television and organizes discussions in relevant issues. The King Mahendra Trust for Nature Conservation (KMTNC), an autonomous non-governmental and non-profit-making institution, was established in 1982 under a separate Act (The King Mahendra Trust for Nature Conservation Act, 1982) for the purpose of conserving natural resources and to improve human welfare. It is now supporting the bio-diversity protection programme of HMG/N and running a separate Annapurna Conservation Project in Kaski, Parbat and Mustang areas. HMG/N has liberalized the rules for local NGOs to negotiate with international NGOs.

- D. An assessment of critical factors for a successful environment and forest conservation intervention in the country.

Since poverty is the major cause of environmental degradation, the consequences of poor land management had resulted the misuse of natural resources including forests, and consequently leading to the degradation of the environment. The strategies for proper land use management include the formulation of a national land use policy with suitable legislation to optimize production from the limited resource base with due consideration of the environment. These were addressed in the National Conservation Strategy, Master Plan for the Forestry Sector, the Agriculture Perspective, the Tourism Master Plan and similar other sector policies. Accordingly, Acts and Rules were amended to promote community forestry and private plantations and/or establishment of private wood lots. Similarly, the Environmental Act is still in drafting stage. Intensification of agriculture in areas having developed infrastructure, protection of forest on steep slopes and vulnerable watersheds including the Siwaliks, management of degraded forest and shrublands for

timber, firewood and fodder production, and improvement of pasture lands were initiated. Environmental Impact Assessments (EIA) were carried out for multipurpose hydro-electric projects, irrigation, pollution-prone industries, road and transport, forestry and watershed, tourism (trekking tourism) and resettlement projects. But, because of the absence of an effective organization supported by a separate Environmental Act the recommendations made on the above EIA could not be implemented in the field.

The strategy in managing the natural resources and the environment became very weak in the past in spite of strong emphasis on several policies and programmes. Towards the end of the 7th Plan and the beginning of the 8th Plan, much attention was given to this sector by making appropriate plans, strategies and programmes (please refer Section C, Historical Perspective). However, the related programmes could not be implemented effectively and sustainably, mainly due to the weak and inefficient implementation and changeable government policy along with the lack of political commitment and people's participation. Programmes were mostly implemented on top-down approach and the people's need and their active involvement were not taken care. Some donor assisted projects limited people's participation and sustainability of the programme only in their project documents. Attempts were also made to make this sector (Forestry and Environment) within the framework of Integrated Rural Development (IRD) projects but unfortunately most of the IRDs were found ineffective due to the lack of coordination or integration with many sectoral agencies of the government. Although the Eighth Plan(1992-97) included environment as a separate sector, but it is still confined to study and research by CCNCC having no implementing hands. Its focus were limited on pollution problems in Kathmandu valley, although majority of problem lies in the rural areas. It even could not pursue the promulgation of Environment Act, although a draft was already made in 1985 by the then Environmental Impact Study Project (EISP) under the Department of Soil Conservation.

The present strategy of managing watershed activities based on sub-watershed management planning with people's participation, could be more implementable and sustainable than those traditional conservation practices adopted earlier. The same strategy is proposed to follow in this case also. Here, participation of women on decision making processes through users' groups and mobilization of local communities on participatory planning would be given priority during the implementation of the proposed activities. Development of alternate energy in place of firewood with encouragement to community forestry, village wood-lots, and introduction of bio-gas, solar and wind power are also positive towards the conservation of already depleting forest resources. Also, the establishment of National Parks, Hunting Reserves and Protected areas have helped to conserve the bio-diversity. The attempt to delineate and manage some areas of National Parks and Reserves of the Terai as buffer-zone, to allow access to the local people to participate in conservation and protection of the environment

while meeting their basic needs, would be very positive on justifying the value of such protected areas for the benefit of the local people. Unless people and local politicians are fully aware of the environmental situation and are motivated for their participation, any scientific measures or government efforts in this area would not be effective. Therefore, all development activities related to environment, especially the management of natural resources, must be carried out with maximum people's participation and they should always be taken as a part of beneficiaries of that activity.

E. A general description of the environment and forest conservation situation in the proposed Banepa-Sindhuli road corridor.

The road corridor connecting Sindhuli-Madi and Banepa passes through a part of Sindhuli, Ramechhap and Kabre districts. It passes through a lowest height of 800m at Sindhuli-Madi and a maximum height of 2295m at Sindhuli-Gadi. Other prominent places that fall on its alignment are Panauti, Dabcha, Kalinchor, Nepalthoak, Khurkot and Sindhuli-Gadi, with a vast resource of agricultural, forestry and touristic importance. The major portion of the road passes through Sunkosi and Rosi rivers, and meets the confluence of Tamakosi and Sunkosi at Nalu Ghat. Other rivers and rivulets(Kholas) that fall on the proposed alignment are: Guang khola, Khahare k.,Vyakure k., Narke k.,Moka k., Chhahare k., Ladku k. and Panauti k., and numerous streams and hill torrents.

Boundary of the Proposed Banepa-Sindhuli Road Corridor:

Past experience of the existing highways has shown that the construction, rehabilitation and maintenance of legally defined portion of the road(i.e. 10 - 25 metres on either side of the centre line of the road) is found to be unsustainable in the long-run, for such a highway passing through rural and remote mountain areas. It is also felt that local people should get maximum benefit from the proposed road, in terms of quick and easy delivery of goods and services and also for the overall economic development of the people living in the vicinity. Hence, more area on both sides of the proposed road in the form of effective road corridor (ERC), taking advantage of the sub-watersheds is included for integrated management.

Several micro-watersheds having a common drainage outlet for surface water constitute a sub-watershed. It functions as a single ecosystem and any physical change occurring within that sub-watershed also affect the areas downstream. The hydrological

linkage between the areas upstream and ,downstream of the watershed make the area an ecologically functional sub-watershed. A sub-watershed may also be subdivided into operational areas based on the common interests of the community: collecting fuelwood, fodder, timber, water and producing food.

The tentative boundary of the proposed ERC is as follows:

Starting from Banepa(Kabre district) the proposed ERC boundary passes through Nala forming north boundary and joins Dhulikhel forming the eastern boundary. From Dhulikhel the boundary follows south of Bhedabari and north of Maithankot to Darim Pokhari (Narayanthan) and then to Choptar. From Choptar the boundary passes through Ramechhap district along north of Khaniyapani village to Chisapani and then to Sindhuli-Madi, crossing Sunkosi River and via south of Pokharia. Similarly, back from Sindhuli-Madi the ERC passes through Ahale to south of Khurkot and then via Sindhuli-Gadi to Chhapdanda (Kabre district) crossing the southern ridge of Okhreni and Kerabari. From Chhapdanda, the boundary passes through the north-eastern ridge of Bhugdeo(2172m) and Godavari-Phulchoki (2765m) to Sangha Bhanjyang(bordering Bhaktapur district) and then to Nala and Banepa (Map 2).

Since management of resources like soil, water and forests can not be done in isolation and it needs to be integrated with other activities of the community and with their active participation. This needs to be concentrated at a reasonable area (preferably sub-watersheds) in order to see some impacts. The whole ERC area is thus divided into six sub-watersheds, which would be further sub-divided into several functional micro-watersheds for intensive management. The Integrated Sub-Watershed Management Planning (ISWMP) would be employed for effective implementation of various activities. The six sub-watersheds identified, with their areas in hectares are as follows:

1.	Banepa-Panauti Sub-Watershed	21,735 ha.
2.	Dabcha Sub-Watershed	19,136 ha.
3.	Roshi Sub-Watershed	16,916 ha.
4.	Sunkoshi Sub-Watershed	12,332 ha.
5.	Khurkot-Dumja Sub-Watershed	15,908 ha.
6.	Sindhuli Sub-Watershed	10,127 ha.
	Total:	96,154 ha.

Source: Area calculation from LRMP District Land Use Map of Scale 1: 125,000.

The western and southern boundaries of the sub-watersheds were taken up to the ridge separating the watersheds of Bagmati River and Rosi Khola. Since all areas within the Bagmati watershed would be managed by the Bagmati Watershed Management

Project with EEC funding, the area lying within the Rosi Khola catchment is included in the sub-watersheds. This way, the distance from the proposed road to the boundaries of the sub-watersheds (generally ridges) varies from about 1 km to 12 km, depending upon the location. Whereas the distance from the proposed road towards the eastern boundary of the sub-watersheds would be about 3 to 5 km (Map 2). This however, should be reassessed during the detail project planning. The sub-watersheds could be further subdivided into micro-watersheds and more activities could be done on areas closer to the proposed road. For this, the sub-watersheds would contain the areas delineated as core area where more attention would be done during programme implementation, buffer area which acts as a boundary between the core area and the settlement and meet the natural resources need of the users with proper management, and the community development areas include all activities for enhancing the socio-economic development of the community.

Majority of the area lies under fairly good (Sindhuli) to poor (Ramechhap) and very poor (Kabre district) watershed condition except at valleys (Banepa, Nepalthoak and Sindhuli-Madi) which fall under good watershed condition (Map 1). In general, the watershed condition of the area where the proposed road passes is poor. The topography comprised of narrow valleys (except Banepa) and steep fragile slopes.

The climate ranges from sub-tropical (humid) at the valley bottom along the Sunkosi and Rosi to cool temperature and sub-humid at the ridges. Temperature ranges from the mean annual temperature of 5°C minimum to 35°C maximum. The monsoon rain makes the whole area through which the proposed road passes, prone to soil erosion, formation of gullies, occurrence of landslides in the hills and floods in the valleys.

Because of diversity in physiography and climate, the forest types also differ from sub-tropical to alpine, containing Sal (*Shorea robusta*) forest with its associates at the valley bottoms, Khair (*Acacia catechu*), Sissoo (*Dalbergia sisoo*), Simal (*Bombax malabaricum*) and Kadam (*Anthocephalus cadamba*) along the river banks and Lower Slope Mixed Hardwood (LSMH) at lower elevations and Upper Slope Mixed Hardwood (USMH) at the upper elevations. Pine (*Pinus roxburghii* and *P. Wallichiana*) with its associates and Oak + Rhododendron forests exist at the ridges and at higher altitudes (>1600m). The LSHM consists of Utis (*Alnus nepalensis*), Chilaune (*Schima wallichii*), Katus (*Castanopsis sp.*), Tejpat (*Cinamomum tamala*), Koiralo (*Bauhinia variegata*), Tanki (*B. retusa*), Ritha (*Sapindus mukurosi*), Lapsi (*Spondias axillaris*) and several others. Similarly, the USHM consists of Oaks (*Quercus incana*, *Q. lamellosa*), Paiyun (*Prunus cerasoides*), Lakure (*Fraxinus floribunda*), Chilaune, Okhar (*Juglans regia*), Saur (*Betula utilis*), Siris (*Albizia sp.*), Kaphal (*Myrica nagi*), and others. Besides, the villagers have planted several fodder species such as Khaniu (*Ficus cunia*) and other *Ficus spp.*, Chuletro (*Pterospermum acirifolium*), Tanki and Koiralo, Dabdabe (*Garuga pinnata*), Kimbu (*Morus alba*) and others at their marginal farm lands and Pakho or Khar Bari.

Because of the lack of alternatives of fuelwood, the forests at nearby habitation are heavily used leaving behind shrub lands, although some needs are fulfilled from their agriculture leftover and from trees around their homestead. In inaccessible areas, the forests are still intact. Table 1 shows general land use of the proposed ERC.

Table 1. Land use information of the proposed effective road corridor(ERC).

Land use	Area in hectare.
Forests	53305 (55%)
Grass land	3914
Shrub land	20549
Plantation	1524 (only in Kabre district)
Other Forests	27318
Agriculture	40847 (43%)
Others(River and its beds)	2002 (2%)
Total:	96,154 ha.

Source: Area calculation from LRMP District Land Use Map of Scale 1: 125,000.

Based on the table, majority of the area falls under forested land. But, because of uncontrolled use of forest resources most of the accessible forests were converted into shrub lands (i.e., 38 % of the forested lands).

The agricultural crops consists of rice, wheat, potato and sugarcane at the valley bottom and along the main rivers(Sunkosi and Rosi) and maize, millet, potato, mustard, buckwheat and lentil are grown on slopes with terraces of different size, slope and aspects. Majority of the crop depend upon the monsoon rain (July - September). Crops at the valley bottom are mostly irrigated. The agriculture land which is 43 percent of the proposed ERC needs to be applied intensive conservation practices and improved agricultural managements for sustainable and economic agricultural production. Information collected in Socio-economic survey would be utilized in prescribing proper land use and suitable technology.

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As the proposed road passes through the three districts: Kabre, Ramechhap and Sindhuli, major part of the road passes through Kabre and Sindhuli districts, whereas only 13 % of the total proposed ERC falls in Ramechhap district along the Sunkoshi River (Table 2).

Table 2. Area of the proposed road corridor lying in different districts.

Districts	Area in ha.
Ramechhap	13,092 ha (14%)
Sindhuli	28,751 ha (30%)
Kabre	54,311 ha (56%)
Total:	96,154 ha.

Source: Area calculation from LRMP District Land Use Map of Scale 1: 125,000.

List of Information Required:

- * Climate, slope (or topography);
Present land use including types of agricultural lands (terraced/non-terraced, bari/khet, irrigated/unirrigated, types of crops, man/land ratio, level of crop production per year/family(i.e., overall food situation), livestock and their production, grazing and fodder situation, fruit tree plantation, fuelwood consumption and its source, etc;
- * Socio-economic information including population density, ethnic groups, literacy, sanitation, health and drinking water;
- * Income generation activities including local skills, cottage industries and forest based small industries (preferably based on non-timber forest products) and their market facilities;
- * Visible impacts on the environment including deforestation, soil erosion and soil fertility status;
- * Forests - types and composition, condition, causes and the extent of forest deterioration and/or deforestation, Shrub-land management and new plantations and their species(fodder, firewood and

small timber), land available for afforestation, protection forests, community forests and private wood lots and their situation, pasture or grassland management by private individuals or community, etc.

- * Road/trail network and their condition;
- * Profile of the main rivers and their tributaries which passes through the proposed ERC.
- * Overall watershed condition and efforts of local communities in conservation;
- * Level of environmental awareness and local efforts in mitigating adverse impacts, etc;

F. Possible strategies and programmes for a successful environment and forest conservation intervention in the proposed road corridor area.

The objectives of road construction is:

- to provide quick delivery of goods and services and reduce overall cost of transportation; and
- to assist economic development of areas which would be made accessible by the proposed road.

Besides the above main objectives the following are some of the specific objectives within the proposed ERC:

- to use the land and water on sustained basis with economic production;
- to reverse the trend of ecological deterioration;
- to continue soil and water conservation and reduce silt load in rivers;
- to make local people aware of watershed management, erosion control measures and overall environmental protection;
- to help the socio-economic development of the people living in and around the proposed ERC, while protecting the environment and the forest resources.

The Intervention for an Ideal Project:

The effective width of roads that are legally under the government (Road Department) jurisdiction varies from 10 to 25 metres on either side of the centre line of the road, depending on the type and classes of highways. However, in mountain terrain the roads/highways are influenced by the land use on the entire slope which the road crosses. This zone can be referred as the 'road corridor'. But, since the road can contribute to the economic development of neighbouring areas (-at least a distance of 4 - 5 hours walk), the road corridor could be easily expanded to a much wider landscape. Also any physical changes that may occur in the upstream of rivers, streams (or Kholas) and gullies by the land use or developmental activities might affect the downstream structures like causeway, culverts and bridges of the proposed road. The Prithibi Rajmargh (Naubise-Pokhara Road) could be taken as an example of such negative impact. This concept of ERC is new and is not a copy of any other road projects, rather based on experience of the author on different types of highways so far built in Nepal, including the Lamosangu-Ziri road. This is a new proposal and if implemented successfully it could be taken as a model for future road projects. The integration of community development with conservation measures along the construction of proposed effective road corridor (ERC) will help to minimize the environmental risk and will lower down the cost of road maintenance, and also provides help to increase the economic development of the people living in the area. The management of such areas however, does not fall within the jurisdiction of one agency (Road Department) and calls for the integrated management of:

- the effective area of the road itself (i.e., 10 - 25 metre on either side from the centre of the road);
- the forest lands under the jurisdiction of Forest Department or the local community (-in case of community forestry);
- private or community lands;
- rehabilitation or conservation of watersheds (or sub-watersheds) and land use regulation including protection of infrastructures under the jurisdiction of the Department of Soil Conservation.

The implementation of such an integrated project, i.e., Road with Community Development and Environmental Protection (RCDEP), calls for an effective and responsible institution that can coordinate and provide sufficient technical help to the local community.

As the road passes through three districts: Sindhuli, Ramechhap and Kabre (Refer Map 2), a central-level project with implementation of activities through people's participation at the local level would be ideal.

A more detail approach in dealing with RCDEP would be taken with experience from the previous road projects such as: Lamosangu - Jiri Road, Dharan - Dhankuta Road and other relevant main roads or feeder roads.

When we mentioned about integrated project, it is relevant to look back at the earlier Integrated Rural Development (IRD) projects, which were partly a success and in totality is a failure. The reasons may be numerous, but some of them are: too many sectoral agencies to coordinate; lack of integration of activities; Project Co-ordinator used to spend most of his valuable time in reimbursement procedure and the experts from the donor side mostly remained in the cities where modern facilities were available; the activities were scattered and rather pulled out by local political forces instead of integrating them to achieve a common goal; programmes were donor driven and implemented with top-down approach although emphasis were given on people's participation on project implementation in the project document, etc. Such cases may not prevail here since a) activities will be carried out by the users themselves and that would be based on their needs, b) few agencies such as agriculture, livestock, roads and forestry only to be coordinated, and c) all activities would be implemented on sub-watershed basis with ISWMP concept.

Strategy for Effective Conservation Measures:

Watershed management programme in Integrated Sub-Watershed Management Planning Approach (ISWMP) is needed to reverse the trend of ecological deterioration and to use the land and water resources for sustained and economic productivity. The ISWMP is a planning process for developing and managing the land and other resources of a sub-watershed intensively and in harmony with other activities of the community. Integration means combining different components to achieve a common objective. Hence, integrated sub-watershed management planning is the "planning for complete management of soil, water and forestry resources of the sub-watershed along with the economic development of the community. ISWMP operates at the community level considering people's needs and with their active participation. Here, identification of smaller sub-watersheds (micro-watersheds) within the proposed 6 Sub-Watersheds is to be done with full participation of the local people. During implementation, detail information will be collected by the local people using relevant maps, aerial photos and information collected with the help of questionnaires using Rapid Rural Appraisal (RRA) technique. Priority would be given on traditional and indigenous resource management techniques and practices, and the level of awareness of and the skill of users (or beneficiaries).

Three steps would be involved in applying ISWMP technique, they are: investigation, negotiation and implementation steps. In the investigation step, field staff or users are first taught to use aerial photographs and maps, collect information using

technique like Rapid Rural Appraisal (RRA), and to sketch maps of the sub-watershed by their actual participation. Then the team goes to the field and carry out field investigations. These will include identifying real users, beneficiaries and various interest groups and determining each group's relation with the available resource base. Data on socio-economics, ecological and other physical conditions, and land use practices are to be collected using the given formats and set questionnaires. RRA is commonly used for this purpose. Most of the critical problems, their causes and their common solutions are to be discussed and decided upon during the negotiation step. This step includes identifying users' needs and problems and the users' own solutions to solve them. Attention would be given to users' responsibility for monitoring and maintaining activities carried out by them in order to ensure sustainability. Finally, the implementation step is designed to ensure the sustainability of the programme by enabling the people themselves to strengthen their innate capabilities.

Hence, all programmes and activities would be assessed on the basis of their effectiveness and sustainability. Effectiveness would be assessed in terms of the desired technical quality of activities. Whereas sustainability would be assessed in terms of:

- Peoples' perception of their environmental problems;
- Demand/Supply situation of natural resources;
- Transfer of technology or knowledge;
- Local institutional capacity; and
- Expected multiplication effect of the activities done.

Traditional and Indigenous Community Resource Management System:

In the mountains there are always indigenous systems governing the use of resources, the most relevant system is the forest management system. The villagers (or community) protect their forests by setting up forest protection groups and recommend when villagers are allowed to collect firewood usually just once a year. These groups are supported by donations of either money or time. Forest management practices described above are the most common, but if other practices also exist, that too must be ascertained. In addition any system governing the use of fodder and firewood must be identified. Finally, if traditional practices are not followed, it is worth knowing because this information is helpful in prescribing new approaches. Similarly, land use practices, which differ from one ethnic group to other, must be linked to soil conservation practices. Therefore, information regarding ploughing, types of crops cultivated and

cropping patterns must be collected. Practices concerning livestock, an integral part of rural economy, and land tenure, which is transferable from father to son are also areas necessitating investigation. Information about these issues can be collected during field visits.

Programmes/Activities for Implementation:

1. Technical Measures.

1.1. Land Productivity Conservation - It helps to increase production through appropriate land use management on the basis of land capabilities. The activities include: Terrace improvements, plantation of grass and tree species at suitable places, on-farm conservation activities including proper cropping techniques, drainage improvement, irrigation channel improvement, etc.

1.2. Forest Management - Realizing the fact that the forests in the Mid-hills and Siwaliks serve as an important protective cover against soil erosion and landslides, moisture retention and even providing basic needs such as, fuelwood, fodder and small timber requirements as well as to improve the quality of life of the local people. Since the forest cover is rapidly disappearing it has now become urgent to check further degradation of the forests in this region. The area to be opened up by the proposed road is already a food-deficit area and it might lead to massive forest destruction if steps for proper management is not taken in time. Therefore, it would be wise to integrate forest management in this project.

The relationship and the trust between forestry staff and local people is a major factor that influences the management of forestry and natural resources. Most of the natural forests within the proposed ERC are unmanaged and are being overused. Although some forests were handed over to the users' groups or communities (under Community Forestry), there lacks proper management/operational plan for the forest that are given to users. Such handing over of natural forests may further enhance their deterioration. However, past records of forests handed over to the communities would be further studied to derive necessary recommendations.

Other programmes like introduction of fuelwood efficient cooking stoves, nursery development in private sector and plantation of suitable species (firewood, fodder and small timber) in the degraded forest areas, adoption of agro-forestry practices and proper management of Kharbari or pasture. There are about 18349 ha (38%) of shrub lands within the forested area of the proposed project boundary, which needs proper management in order to improve natural regeneration and to allow the selected tree species to grow. There is a need to prepare operational

manuals for shrub-land management. The Department of Forest (DOF) with the help of FINNIDA, had prepared shrub-land management plans for some selected districts. Establishment of demonstration plots within the project area with such management would serve for field information and training for the users.

The Dolakha/Ramechhap Community Forestry Development Project (DRCFDP) under the Swiss Development Cooperation (SDC), a continuation of the earlier Hill Development Project, is trying to help the local community in managing their community forests as well as to meet other needs of the community such as, management of Lokta (*Daphne papyracea*), Allo (*Girardinia heterophylla*), Bamboo (*Dendrocalamus spp*), Nigalo (*Arundinaria spp*), Amriso (*Thysanolaena agrostis*) and other medicinal plants as well as control of soil erosion and floods. DRCFDP is also trying to encourage local people to raise private forests in order to become self-sufficient for their firewood and fodder needs. But, because of lack of infrastructure (road and/or ropeways) villagers are not been able to handle their products commercially and a very little is locally marketed. The most marketable product is the hand-made paper, locally called Nepali Kagaj. To achieve sustainability of the programme, the project has given attention on (a) plantation of trees in private and community lands, (b) strengthening the institutional capability of local population and (c) creating awareness on local people towards protection of the environment especially through mobilizing village women. DRCFDP however, has so far concentrated its activities in Dolakha districts and very little has been done in Ramechhap district. Hence, there is still a wide scope of RCDEP project to work in the proposed area.

Similarly, the Nepal/Australia Community Forestry Project (NACFP) is operating in Kabre and Sindupalchoak districts since more than 20 years. It has now concentrated its community forestry programme in line with the international move from traditional forestry to people oriented one and the change in policy by FAO towards "Forestry for local community development" and the declaration of the VIII World Forestry Congress in Jakarta in 1978. However, NACFP is concentrating only on forestry activities (community forestry with afforestation) and there is still a space for other activities mentioned in this project (RCDEP). Also, no particular consideration on the role of women is provided so far in NACFP, although some participation of women is observed at the grass roots' level in some locations.

Forest Guards (FD) are always taken as a police by the villagers, and whose role is very vital in the present context of forest management with the help of the local population. As majority of them being from the same locality, they could be more effective if taken as a "Change Agent" or "Motivator" with some training. They are being neglected so far, and in some projects only a few of them receive few days training on nursery techniques. During project implementation some of the local people, preferably women, are recommended to be hired as motivators.

Another way to manage the community forestry more efficiently and effectively with people's participation is by setting a committee such as, Forest Management and Utilization Committee (FOMUCO) at each sub-watershed. The chairman of FOMUCO would be the village head or any body elected by the users' committee. Other members would be the representatives from women, youth and peasant groups. The Member-Secretary would be selected by the members of the committee. Local forestry or soil conservation official(s) would be the ex-officio member of FOMUCO and would act as a catalyst or facilitator in technical matters and providing financial assistance available from donors.

1.3. Prioritization of Sub-Watersheds - The total length of the proposed ERC is divided into six sub-watersheds. Although their prioritization should depend upon the topography; status of soil erosion; degree of slope; land use; land capability; population and its spacial distribution, ethnicity, literacy and economy; but, due to the lack of the above information the sub-watersheds are divided on the basis of manageable areas by the local communities followed by natural and administrative boundaries. The boundaries could be further rectified after field visit and looking at the above parameters.

1.4. Identification of users' groups - Most of the conservation activities would be carried out through users' groups. Attention would be given for adequate representation of women and occupational class people. Project people and motivators would encourage their participation during discussion. The users' group would be provided with technical help and other materials needed for the implementation of activities.

1.5. Infrastructure development, maintenance and their protection - The development, improvement, maintenance and the protection of infrastructures such as roads, trails, irrigation channels, foot-bridges and ropeways would be included in the programme. Rehabilitative activities such as gully control, torrent control, road side stabilization, etc., would be some of the activities to protect the above mentioned infrastructures. Experience would be taken from Bagmati Watershed Management Project (HMG/EEC) for installation of ropeways, especially designed for helping income generation activities in the mountain terrain. Although the proposed road project would help to open the hinterland for economic development but, still many parts would remain inaccessible and which calls for the installation of such ropeways and suspension bridges to cross big rivers. Priority would be given to join areas of touristic importance. Similarly, priority would be given to improve trails since it is vital for economic activity of the local population and at the same time, it would be the source of erosion hazards if left unimproved.

1.6. Community Soil Conservation and Environmental Awareness Programme- This programme is intended to develop the knowledge and skill of the local community to participate fully on conservation activities and the protection of the environment. Some of the activities under this programme may include:

Women motivation programme.
Identification and promotion of demo-farmers for extension.
Formation of conservation committees and users' groups.
School programmes on environmental education.
Nursery establishment and distribution of seedlings.
Training, demonstration and other extension activities.

1.7. Natural Systems Monitoring - Simple techniques would be developed to monitor silt discharge in the rivers after conservation measures. Change in agricultural production after adopting proper land use, on-farm conservation measures and the application of bio-fertilizers. Similarly, improvement in the status of natural forests and overall assessment of the impact of project activities in the natural environment would be done at certain time frame.

2. Socio-Economic matters - The population in the proposed ERC (data would be made available from the socio-economic survey) depend primarily on subsistence farming. The economic development of the population living in these sub-watersheds depends upon the less reliance on agricultural economy and progressive increase in forest/agro-based small industries. Every effort to increase cash income from such economic diversity would be helped by the project.

3. Community health, sanitation and drinking water - The maintenance and supply of quality water, proper health care and sanitation would also be a part of the project activity in order to maintain a clean and healthy environment of the people living in the project area.

4. On-farm and Off-farm income generation activities - Production of fruits like Junar, oranges and lemons and vegetables, live-stock farming, bee keeping, plantation of medicinal and aromatic plants and their processing, promotion of cottage industries using Nepali Kagaj from Lokta, goods from Allo fibre and bamboos would be encouraged. Installation of cable-ways or rope-ways would help marketing of finished or semi-finished products from areas away from the proposed roads.

5. Monitoring & Evaluation and the Environmental Impact Assessment (EIA) - Project activities monitoring and assessment would be done regularly within a time frame in order to ascertain the impacts of the prescribed activities. Also, EIA would be done at the end of the project implementation to assess the overall impact of the project activities on the environment.

6. Organization and Implementation - The project activities would be carried out simultaneously along with the road construction and also after the completion of the road. It is hoped that the local community would be able to handle the maintenance of the finished projects with their own skill and resources. Project period (preferably 5 years), costs (total project cost and year-wise costs), government inputs, donor inputs and villager's contribution are all to be ascertained.

7. Factors ensuring sustainability - The following factors would be responsible for the successful and sustainable implementation of the project (RCDEP), they are:

Institutional:

Policy support.

Strengthening local institutions (private/public).

Appropriate and/or sustainable technology.

Training opportunities and creation of public awareness on problems and their mitigation measures.

Operational:

Up to date appraisal of social, physical and environmental parameters to ascertain project activities.

Prioritization of sub-watersheds based on their severity of degradation and socio-economic conditions, and also the willingness of local people on participation.

Involvement of local people and NGOs, and also involvement of women in decision making process.

Integrated approach and proper coordination with related agencies.

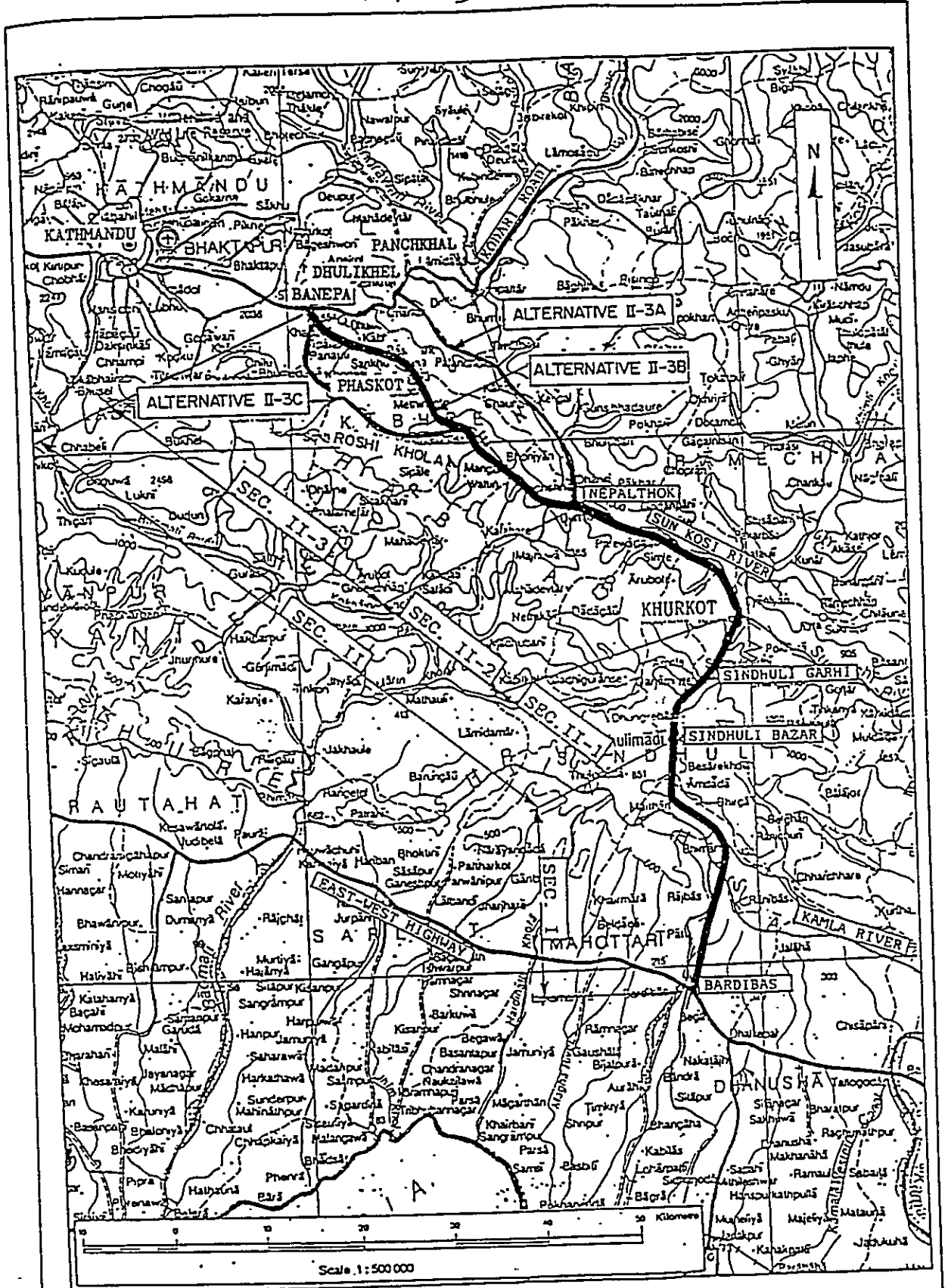
Timely monitoring of the activities.

Assessment of impacts of the activities on the environment, etc.

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MAP - 3.



Map 3. Alternative Routes in Section II-3



Map 2. Proposed ^(Banepa - Sindhuli) effective road corridor (ERC) on Sub-watershed basis.

